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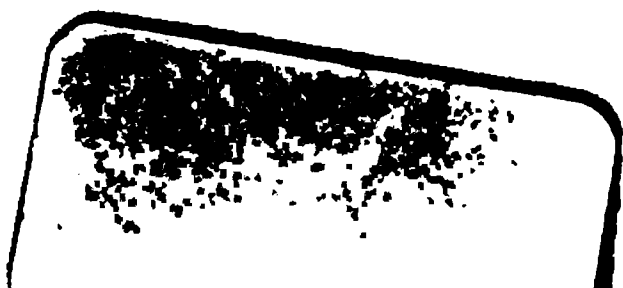
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UNITED STATES BUREAU OF EDUCATION

BULLETIN, 1914, NO. 11

WHOLE NUMBER 584

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

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MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

CONTENTS.—Introductory notes—Educational history and biography—Current educational conditions—Pedagogics and didactics—Educational psychology, Child study—Special methods of instruction—Special subjects of curriculum—Kindergarten and primary school—Rural education—Secondary education—Teachers: Training and professional status—Higher education—School administration—School management—School hygiene and sanitation—Sex hygiene—Physical training—Social aspects of education—Child welfare—Moral education—Religious education—Manual and vocational training—Vocational guidance—Agricultural education—Home economics—Professional education—Education of women—Negro education—Blind and deaf—Exceptional children—Education extension—Periodicals represented in this number—Bulletin of the Bureau of Education.

INTRODUCTORY NOTES.

The following are especially noteworthy books and articles mentioned in the present bulletin, the numbers in parentheses referring to the numbers of the full entries:

Thorndike, Educational psychology, vol. 3 (617); Yocum, Mathematics as a means to culture and discipline (652); Grant, English education and Dr. Montessori (653); Hewitt, Woman peril in American education (675); Keppel, Columbia (688); Taft, The college slouch (695); Elliott, City school supervision (703); Hutchinson, School costs and school accounting (705); Münsterberg, Sex education (732); O'Donnell, Creed and curriculum (749); Mann, What is industrial science (762); O'Shea, Coeducation (789).

Only publications of the Bureau of Education are available for free distribution by this office. All others may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. A list of periodicals indexed, with places of publication, may be found at the end of this bulletin.

Books, pamphlets, etc., intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

EDUCATIONAL HISTORY AND BIOGRAPHY.

581. **Armstrong, L. E.** An educational autocrat. *Sierra educational news*, 10: 200-202, March 1914.

An appreciation of Frank L. Crone, the director of education in the Philippines.

582. **Russell, Isaac.** David Starr Jordan. *World's work*, 27: 649-55, April 1914.

An appreciation of the life and career of David Starr Jordan, president of Leland Stanford Jr. university. His work for international arbitration, etc.

583. **Tucker, Louise Emery.** Visualized history of education. New York, Hinds, Noble & Eldredge [1914] 200 p. 2 fold. charts. 4°.
Contains outlines of educational history, and two charts presenting a general survey of the field of education.

584. **Wilson, Louis N.** G. Stanley Hall; a sketch. New York, G. E. Stechert & co., 1914. 144 p. illus. 8°.
"Bibliography of published writings": p. [119]-144.

CURRENT EDUCATIONAL CONDITIONS.

585. **Bohn, Frank.** The Socialist party and the public schools. International Socialist review, 14: 605-7, April 1914.

Advocates the organization of the entire teaching force into unions; superintendents to be elected by and with the consent of the teachers to act only in connection with their central committee.

586. **Chancellor, William E.** Causes of the present interest in education. School journal, 81: 118-22, February 1914.

587. **Claxton, Philander Priestley.** The National Bureau of education. Colorado school journal, 29: 18-20, March 1914.

From Declaration of principles, National education association, 51st annual convention, Salt Lake City, in N. E. A. bulletin, 2:20-21, September 1913.

Gives the functions of the Bureau of education, the immediate demands on the Bureau, and the most pressing needs.

588. **Collins, Joseph V.** Weakness in American education. Educational review, 47: 391-405, April 1914.

Emphasizes more Spartan methods in education. Work made too easy for pupils. Means should be provided for training the young in habits of physical industry.

589. **Cunliffe, John W.** The new France. Independent, 78: 26-27, April 6, 1914.

An article describing the new spirit in France, resulting from athletic sports in school life.

590. **Fitz Gerald, Cyril.** The schoolboy in Canada. London, Northern printeries, 1914. 168 p. 8°.

Presents the advantages of settlement in Canada for English schoolboys. Contains a summary of the educational systems of Manitoba and Alberta, p. 56-101.

591. **Fitzpatrick, Alfred.** The swing-team boss. World's work, 27: 698-702, April 1914.

Describes the work of carrying the school to the construction camp of the new railroads on the western frontier of Canada. Education of foreign laborers.

592. **Hall, J. O.** Defects in the Kansas school system and suggested remedies. Western school journal, 30: 92-95, March 1914.

593. **Jackson, Cyril.** Outlines of education in England. London [etc.] A. R. Mowbray and co., ltd. [1913] 200 p. 12°. (Christian social union handbooks, ed. by H. S. Holland)

594. **Lockey, Joseph Byrne.** Estudios sobre la instrucción primaria en el departamento de Lima y la provincia constitucional del Callao. Lima, Perú, Gill, 1914. 290 p. illus. 8°.

595. **Massachusetts. Commission on immigration.** Report on the problem of immigration in Massachusetts. Boston, Wright & Potter printing co., state printers, 1914. 295 p. illus. 8°.

Contains much interesting and suggestive educational material.

596. **Nock, Albert J.** An adventure in education. American magazine, 77: 25-28, April 1914.

Work of the public schools at Gary, Ind. Vocational education.

597. **Strayer, George D.** The Vermont educational survey. Educational review, 47: 325-42, April 1914.

Cites the provisions of the survey, and declares the report to be fair and complete, on the whole. In the opinion of Dr. Strayer, its greatest weakness is to be found in the idealistic character of many of its recommendations. A bill embodying the recommendations of the report is being prepared for submission to the state legislature of Vermont.

The section of the report giving the statistical data upon which many of the conclusions are formed will prove very useful and valuable to the student of current educational questions.

598. **Trensch, G.** Die deutschen im auslande und ihre schulen. Pädagogische zeitung 43: 160-63, 178-82; February 26, March 5, 1914.

"In 1870 there were 24 foreign German schools in Europe and 26 elsewhere. To-day the number is estimated at 1,500." Describes such schools in different parts of the world.

PEDAGOGICS AND DIDACTICS.

599. **Leathes, Stanley Mordaunt.** What is education? London, G. Bell & sons, ltd., 1913. 191 p. 12°.
600. **Moon, A. H.** Standards of judging teaching. School and home, 6: 7-9, April 1914.
601. **Siepert, Albert F.** Some factors in efficient teaching. Manual training magazine, 15: 283-87, April 1914.
602. **Skinner, Hubert M.** Some causes of "inefficiency." Educational foundations, 25: 407-12, March 1914.

The author speaks particularly of inefficiency in the teaching of arithmetic.

603. **Student und pädagogik, II.** Erste studentisch-pädagogische tagung zu Breslau am 6. und 7. oktober 1913. Hrag. von Alfred Mann. Leipzig und Berlin, B. G. Teubner, 1914. 55 p. 8°. (Säemann-schriften für erziehung und unterricht, heft 9)

Contains: Student und erziehungsproblem, von G. Wyneken; von W. Stern. Student und schulreform, von Chr. Pappmeyer. Ziele und wege der studentisch-pädagogischen gruppen an reichsdeutschen universitäten, von W. Benjamin. Die arbeiten des akademischen comitees für schulreform, von S. Bernfeld. Zum inneren und äusseren ausbau der studentisch-pädagogischen bewegung, von A. Mann. Diskussion.

604. **Taylor, A. R.** Justification of method. Oklahoma school herald, 22: 6-8, 6-9, March, April 1914.

Address before the Oklahoma educational association at Tulsa, Okla., December 1913.

EDUCATIONAL PSYCHOLOGY, CHILD STUDY.

605. **Becht, J. George.** Bright pupils and dull pupils. Journal of education, 79: 395-96, April 9, 1914.

Discusses how the interests of the bright child and the deficient child may be best met in the schools.

606. **Brown, George A.** Helps from the use of standard scales of attainment in school subjects. School and home education, 33: 300-2, April 1914.

Presents reports from two teachers, one on the use of the Ayres handwriting scale and the other on the use of uniform tests in arithmetic and the value of the Courtis system of recording grades.

607. **Cajori, Florian.** A new marking system and means of measuring mathematical abilities. School science and mathematics, 14: 283-93, April 1914.

"Read before the Mathematics section of Central association of science and mathematics teachers at Des Moines, Iowa, November 29, 1913."

608. **Clark, L. P.** Psychopathic children. New York medical journal, 99: 709-20, April 11, 1914.

An elaborate account of the work done by the mental clinic of the Board of education, New York city. This clinic was established on October 20, 1913, in connection with and under the general direction of the division of ungraded classes. The consulting staff is composed of experienced alienists, neurologists, educators, sociologists, and psychologists. All nervously abnormal children are studied. Cases are cited, and illustrations given.

609. **Courtis, S. A.** Standard tests in English. Elementary school teacher, 14: 374-92, April 1914.

Declares that the greatest need of the educational world, from the viewpoint of the efficiency of teaching, is "scientific yet *practical* measures of the fundamental abilities actually being developed by school work." The writer cites four functions of standard educational tests. Gives interesting graphic charts to exemplify problems.

610. **Dally, J. F. H., and others.** Biometric and eugenic studies of elementary school children. Child, 4: 495-508, April 1914.

An investigation based on the results of medical inspection for the London county council of 975 children at the Jews' free school, London. Object of inquiry to determine "the correlation, if any, between environment and physical and mental conditions of Jewish children." Statistical tables and graphs.

611. **Davies, G. R.** Elements of arithmetical ability. *Journal of educational psychology*, 5: 131-40, March 1914.

"Classes in arithmetic were given certain tests more or less closely connected with the routine work. While the correlation between computation and reasoning was low, the correlation between their average and the term grade was high. Ability to visualize was also found to correlate somewhat closely with arithmetical power."

612. **Frailey, L. E., and Crain, C. M.** Correlation of excellence in different school subjects based on a study of school grades. *Journal of educational psychology*, 5: 141-54, March 1914.

Results of investigations show that "there is a strong probability that a student who receives high marks in one subject will attain a fairly high rank in other subjects, and that a student who is poor in one will be poor in all."

613. **Godin, Paul.** La croissance pendant l'âge scolaire; applications éducatives. Neuchâtel, Delachaux & Niestlé [etc., etc., 1913] 301 p. illus. 12°. (Collection d'actualités pédagogiques)

614. **Judd, Charles H.** Reading tests. *Elementary school teacher*, 14: 365-73, April 1914.

Defines the different types of reading; notes the contrast between little children and adults.

615. **Russell, L. J.** An introduction to logic from the standpoint of education. London, Macmillan and co., limited, 1914. 137 p. 12°.

"Describes the main aspects of the thinking process with the view of giving the teacher a clear idea of the fundamental things to aim at in getting the child to think."

616. **Stern, L. William.** The psychological methods of testing intelligence. Tr. from the German by Guy Montrose Whipple. Baltimore, Warwick & York, inc., 1914. 160 p. 12°. (Educational psychology monographs, no. 13)

Bibliography: p. 147-152.

617. **Thorndike, Edward L.** Educational psychology. Vol. III. Mental work and fatigue and individual differences and their causes. New York, Teachers college, Columbia university, 1914. 408 p. 8°.

618. **Wallin, J. E. Wallace.** The mental health of the school child. The psycho-educational clinic in relation to child welfare. New Haven, Conn., Yale university press, 1914. 300 p. 12°.

619. **Wardell, Harriet S.** The problem of the abnormally bright child. *Normal instructor and primary plans*, 23: 15-16, May 1914.

Describes the work of the "Self-activity class" in Nathan Hale school, New Brunswick, N. J.

SPECIAL METHODS OF INSTRUCTION.

620. **Cowles, Julia Darrow.** The art of story-telling; with nearly half a hundred stories. Chicago, A. C. McClurg & co., 1914. 269 p. 12°.

621. **Gregory, J. W.** The educational value of the cinematograph. *School world*, 16: 132-34, April 1914.

Says that the moving-picture is "an educational instrument of such high value that those who cater for popular amusement must not be allowed the monopoly of its use." Meets certain objections to its use. See also the report of the Glasgow conference on the cinematograph in education, in same number, p. 143-44.

622. **Kemsies, F.** Diapositiv und film im biologisch-hygienischen unterricht. *Archiv für pädagogik*, 2: 289-99, March 1914.

Describes production and use of motion picture films for hygiene instruction in Germany.

623. **Olcott, Frances J.** Story-telling as a means of teaching literature. *Public libraries*, 19: 141-46, April 1914.

Read before the New York state teachers' association.

624. **Zirkle, K. W.** Possibilities of education by moving pictures. *Colorado school journal*, 29: 11-13, March 1914.

Read before the Colorado school-masters' club, January 23, 1914.

The author takes exception to Mr. Pitt, who says, in the February number of the Colorado school journal, that moving pictures "are not and never can be educative."

SPECIAL SUBJECTS OF CURRICULUM.

625. **Andress, J. Mace.** The teaching of hygiene below the high school. Elementary school teacher, 14: 393-99, April 1914.
Conclusion of paper begun in March issue of Elementary school teacher. Says that "the first step toward getting children to develop the ideals of health is to get them to form the right habits." Discusses methods of teaching hygiene.
626. **Ballard, Anna W.** Efficient teaching of a modern language. Educational review, 47: 379-90, April 1914.
Says that the most important phase of language teaching is the work of the first two years, especially the work of the first year.
627. **Canby, Henry S.** Writing English. Harper's magazine, 128: 778-84, April 1914.
Discusses undergraduate work in English at American universities and colleges.
628. **Edwards, Charles L.** Nature play. Popular science monthly, 84: 330-44, April 1914.
Draws distinction between German methods and American methods of nature-study. Says that "the individuality of the human being must be recognized and respected in the grammar-school grades as well as in the kindergarten, high school, college and university." Deprecates the teaching of all subjects by one teacher in the primary grades. Illustrated.
629. **Epps, Mrs. Claude.** The place of science teaching in general education. Parents' review, 25: 177-89, April 1914.
Advocates science teaching in schools, but not to the exclusion of the humanities. Value of nature study.
630. **Foster, Herbert Darling.** Adequate tests in history. History teacher's magazine, 5: 116-23, April 1914.
Gives, first, Questions proving the most adequate tests in individual college entrance examinations, 1913, and second, Questions proving most adequate tests in the board examinations.
631. **Fulton, Robert Irving.** College courses in public speaking. Public speaking review, 3: 205-9, March 1914.
Paper given before the National council of teachers of English, Chicago, Illinois, November 28, 1913.
Gives ten courses that are given at the Ohio Wesleyan university.
632. **Gray, Mason D.** Coordinating Latin with other high school subjects. School review, 22: 217-26, April 1914.
Discusses coordination in grammar; vocabulary; history, etc. The coordination with English involves "an agreement upon a list of books pertaining to Greek and Roman life which all Latin pupils will read and count as part of their prescribed English reading."
Complete biology list in Classical Journal, 9: 301-6, April 1914.
633. **Hall, Walter Phelps.** Why I have a bad education. Outlook, 106: 848-52, April 18, 1914.
A criticism of classical training.
634. **Kähnert, Herbert.** Die stellung der soziologie an den amerikanischen universitäten. Akademische rundschau, 2: 322-32, March 1914.
A brief summary by institutions and courses of the work in sociology in American colleges and universities.
635. **Lietzmann, Walther.** Die organisation des mathematischen unterrichtes in den preussischen volks- und mittelschulen. Leipzig und Berlin, B. G. Teubner, 1914. 106 p. 4°. (Abhandlungen über den mathematischen unterricht in Deutschland, veranlasst durch die Internationale mathematische unterrichtskommission, hrsg. von F. Klein. bd. V, hft. 6)
636. **Lull, Herbert G.** The revaluation of classical instruction. American schoolmaster, 7: 157-65, April 1914.
637. **Mais, S. P. B.** The teaching of Shakespeare in public schools. School world, 16: 124-26, April 1914.
How to imbue pupils with a love for Shakespeare. Criticises old systems of teaching.

638. **Navarre, Ch.** *Le latin dans l'enseignement secondaire.* *Revue internationale de l'enseignement*, 34: 199-215, March 1914.
The author claims that the relationship between Latin and French is too close to admit of discarding the former from the schools.
639. **Paul, Harry G.** *On handling supplementary reading.* *English journal*, 3: 212-19, April 1914.
To be concluded.
640. **Payot, Jules.** *L'apprentissage de l'art d'écrire.* 2. éd. Paris, A. Colin, 1914.
394 p. 12°.
641. **Philpott, O. H.** *Live biology for high schools.* *Missouri school journal*, 31: 154-56, April 1914.
642. **Pöhlmann, Robert von.** *Die bedeutung der antike für staatsbürgerliche belehrung und erziehung.* *Humanistische gymnasium*, 25: 1-24, March 1914.
A strong plea for "the great school of the ancient" as preparation for the highest type of citizenship.
643. **Rogers, Francis.** *The singing teacher.* *Scribner's magazine*, 55: 466-68, April 1914.
Criticises the so-called "scientific" school of singing, which is based on "physiology rather than on psychology and aesthetics."
644. **Smith, T. M.** *The need of greater thoroughness in geometry and how to secure it.* *Ohio teacher*, 34: 392-95, April 1914.
645. *Suggestions for the teaching of geography.* *Schoolmaster*, 85: 699-702, April 4, 1914.
646. **Trafton, Gilbert H.** *Preparing normal students to teach children about birds.* *Nature-study review*, 10: 84-93, March 1914.
Discusses the work with birds as carried on in the State normal school of Mankato, Minnesota.
647. **Wilcox, W. H.** *The "Hopkins" report on the labor and cost of English teaching.* *Atlantic educational journal*, 9: 262-64, March 1914.
648. **Williams, Edward H.** *Temperance instruction in public schools.* *Survey*, 32: 74-76, April 18, 1914.
A criticism of the textbooks on physiology and hygiene as regards their treatment of the temperance question. Writer says that the relative consumption of liquors and tobacco since scientific temperance instruction has been in active operation has increased in this country. In the face of official figures the school textbooks continue to make the assertion that "the actual quantity of alcoholic drinks consumed is steadily decreasing." The cigarette evil has also increased.
649. **Wolfe, A. B.** *Shall we have an introductory course in social science?* *Journal of political economy*, 22: 253-67, March 1914.
"The belief that some sort of general introductory course in social science should be offered freshmen and sophomores before they take up the specific study of economics, political science, or sociology is apparently taking definite form in the minds of a considerable number of teachers."
650. **Wood, George C.** *A practical course in biology.* *School science and mathematics*, 14: 327-37, April 1914.
The course here fully outlined is adapted to cover the first year of the high school course.
651. **Woolley, Edwin C.** *Admission to freshman English in the university.* *English journal*, 3: 238-44, April 1914.
Results of conditions at University of Wisconsin; information as to "the causes that have for years produced, and still continue to produce, the disbarment from the freshman English course in the University of from 15 to 20 per cent of the entering freshmen on the ground of unfitness to pursue an English course of college grade." Gives requirements, grouped under two heads: Mental grasp and Correctness.
652. **Yocum, A. Duncan.** *Mathematics as a means to culture and discipline.* *Mathematics teacher*, 6: 135-57, March 1914.

KINDERGARTEN AND PRIMARY SCHOOL.

653. **Grant, Cecil.** *English education and Dr. Montessori.* With introduction by C. W. Saleeby. London, W. Gardner, Darton & co., ltd. [1913] xvii, 105, [1] p. 12°.

654. **Holmes, Henry W.** The kindergarten and the primary school. An attempt to bridge a gulf. Kindergarten review, 24: 473-82, April 1914.
655. **Jaffe, Lisa.** Ein tag in der Montessori schule. Säemann, March 1914, p. 97-103.
Record of personal experience of a German teacher in an English Montessori school.
656. **O'Grady, Alice.** American kindergartens and Montessori schools. Educational bi-monthly, 8: 298-306, April 1914.
Paper read at the Wisconsin state teachers association, Milwaukee, November 6, 1913.
657. **White, Jessie.** Montessori schools as seen in the early summer of 1913. London, H. Milford; [etc., etc.] 1914. 185 p. 16°.
658. **Witmer, Lightner.** The Montessori method. Psychological clinic, 8: 1-5, March 15, 1914.
To be continued.
The author claims that Montessori is the first person to give the world a convincing demonstration that methods which are successful in developing the mental capacities of feeble-minded children are even more successful in developing the mental powers of normal children.

RURAL EDUCATION.

659. **Beech, Frank A.** Music in rural communities. School music, 15: 7-10, March 1914.
Considers first the importance of the problem and tells of some things that should be done towards its solution.
660. **Cummins, Robert A.** Principles of rural school supervision. Northwest journal of education, 25: 373-76, April 1914.
Summarizing the author says that "increasing efficiency" on the part of teacher, "ample provision" on the part of the constituency, "self-sufficiency" as a goal, "business methods" as an ideal, and the "missionary spirit" permeating the whole range of activities, all conceived and worked out together constitute what is meant by "scientific supervision of education."
661. **Doyne, John J.** Preparation of teachers for rural schools. American schoolmaster, 7: 166-72, April 1914.
Address given before the Department of normal schools of the National education association at Richmond, Va., February 26, 1914.
662. **Dresslar, Fletcher B.** Some suggestions relative to country schoolhouses. American school board journal, 48: 17, April 1914.
663. **Fleming, Ada M.** Music for rural schools. Oregon teachers' monthly, 18: 474-78, April 1914.
Gives an outline of a course of study for nine months.
664. **Friend, L. L.** The opportunity of our rural high school. West Virginia educator, 8: 2-4, March 1914.
Suggests short courses such as those given in the folk high schools of Denmark.
665. **Hummel, W. G.** A new discovery by an agricultural college. American review of reviews, 49: 440, April 1914.
Describes "ministers' week" at the University farm school, Davis, California. Lectures given on agriculture and rural community improvement; social and other activities of the rural church, etc.
666. **Lynn, Margaret.** The path of learning. Atlantic monthly, 113: 501-9, April 1914.
Experiences in an old-fashioned rural school.
667. **Odum, Howard W.** The relation of the high school to rural life and education. High school quarterly, 2: 139-47, April 1914.
668. **Shawkey, M. P.** What shall we do with the single-room school? Southern school journal, 25: 12-15, March 1914.
Address before the National education association, 1913.

SECONDARY EDUCATION.

669. **Brown, H. A.** The reorganization of secondary education in New Hampshire. School review, 22: 235-48, April 1914.

Continued from March number of School review. Treats of the type of rural high-school plant; curriculum in mechanic arts; and reconstructed pedagogy of the secondary school.

670. **Davis, John N.** An experiment in the classification of high-school students. Western teacher, 22: 244-47, March 1914.

"Superintendent Davis has pointed out a weakness in the prevailing method of classifying high-school students, and has given one solution of the problem—a solution which points toward a better plan."—Editor.

671. **Humphries, Florence Y.** The case of the high schools. Educational review, 47: 366-78, April 1914.

Writer says the reason why "the high-school product is unsatisfactory, primarily to the state, secondarily to higher education everywhere, is found in the high schools themselves, first in their own ignorance of the desired end, and then in the lack of real teaching ability." Lays special stress on the alleged "inferior teaching and inferior ideals of teaching."

672. **Terrell, John B.** Some things about our high schools. Virginia journal of education, 7: 321-24, April 1914.

To be continued.

A brief review of the high school situation in Virginia.

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

673. **Eiselmeier, J.** Die verweiblichung unseres erziehungswesens. Monatshefte für deutsche sprache und pädagogik, 15: 77-82, March 1914.

Declares "feminization" of schools due to three causes: The woman's movement; increase in higher education of women; willingness of women to work for lower pay than men.

674. **Finegan, Thomas E.** The policy of the state in determining the qualifications of her teachers. Albany, University of the state of New York, 1914. 19 p. 8°.

675. **Hewitt, Florence H.** The woman peril in American education. Educational review, 47: 411-17, April 1914.

A reply to an article by Admiral Chadwick in February number of the Educational review.

676. **Milburn, J. Booth.** Teacher's registration in England. Catholic educational review, 7: 337-45, April 1914.

The author sketches the origin and history of the movement for the registration of teachers and briefly considers the conditions for admission to the Register which the representatives of the various departments of the profession have laid down.

677. **New England association of teachers of English.** Report of the Committee on the training of English teachers. Education, 34: 473-90, April 1914.

Also issued as leaflet no. 117 of the New England association of teachers of English, April 1914.

Members of Committee: C. S. Thomas, W. A. Neilson, E. C. Black, William Orr, S. F. Holmes.

678. **Puncheon, Katherine E.** The teacher and the public schools. Journal of the Association of collegiate alumnae, 7: 25-32, March 1914.

An address delivered before the Association of collegiate alumnae at the meeting in Ann Arbor, Michigan.

679. **Seerley, Homer H.** The preparation of high school teachers. American schoolmaster, 7: 120-24, March 1914.

Address delivered before the Department of normal schools of the National education association, at Richmond, Va., February 26, 1914.

HIGHER EDUCATION.

680. **Land grant college engineering association.** Proceedings of the second meeting . . . held at Washington, D. C., November 11-14, 1913. East Lansing, Mich., Lawrence and Van Buren printing co. 108 p. 8°. (G. W. Bissell, secretary-treasurer, East Lansing, Mich.)

Contains: 1. J. P. Jackson: The land grant colleges and mechanic arts, p. 11-15. 2. W. J. Kerr: Some land grant college problems, p. 20-22; Discussion, p. 22-26. 3. O. V. P. Stout: Relation

between the divisions of agriculture and engineering in connection with college work on subjects of joint interest, p. 26-31; Discussion, p. 31-35. 4. J. B. Davidson: Engineering experiment stations: their origin, function, organization, and relations, p. 36-40; Discussion, p. 40-43. 5. L. E. Reber: Summary of engineering extension in the state universities and colleges, p. 47-51. 6. E. B. Norris: Engineering extension, p. 51-60; Discussion, p. 60-68. 7. Edward Orton, jr.: The status of the military department in the land grant colleges, p. 72-82.

- 681. Religious education association.** Conference on the relation of higher education to the social order, New Haven, Conn., March 5-7, 1914. Papers. Religious education, 9: 99-154, April 1914.

Contains: 1. C. F. Thwing: Changing ideals in education—Social changes in the colleges since the civil war, p. 99-103. 2. A. T. Hadley: Education and the new morality—What do the social changes in American life demand of the higher education, p. 103-7. 3. Mary E. Woolley: What fundamental social characteristics may be developed by education, p. 108-12. 4. W. D. Hyde: The socializing value of fraternity life, p. 112-20. 5. J. R. Angell: The moral status of college students, p. 120-31. 6. S. C. Mitchell: Character and culture, p. 131-36. 7. B. C. Ewer: College training for life—The special course on social living, Reed college, p. 137-40. 8. A. B. Wolfe: Social focus of college studies—To what extent do the subjects pursued during the four years of the college course show a tendency toward a social focus? An investigation of the programs of students in Oberlin college, p. 141-54.

- 682. Abbott, Lyman.** An American college in 1850. Outlook, 106: 676-95, March 28, 1914. illus.

Chapter III of the author's Reminiscences. This article narrates his experiences as a student at New York university.

- 683. Butler, Nicholas M.** The freshman year. Educational review, 47: 406-10, April 1914.

Says: "Our great national vice is superficiality." Students badly fitted for college.

- 684. Carpenter, William H.** The Association of American universities. Columbia university quarterly, 16: 158-68, March 1914.

An account of the fifteenth annual conference of the Association, held at the University of Illinois November 6-9, 1913, including the full text of President J. G. Hibben's paper on "The type of graduate scholar."

- 685. Cattell, J. McKeen.** Democracy in university administration. Science, n. s. 39: 491-96, April 3, 1914.

Discusses among other things reforms in the direction of greater faculty control and less presidential autocracy. Says: "The undemocratic aspects of our academic life are almost wantonly enhanced by the position attained by the president with the ensuing hierarchy of deans, heads of departments and other officials."

- 686. Haythornthwaite, J. P.** The new St. John's college, Agra (India). Church missionary review, 65: 150-56, March 1914.

History and activities of the college. Problem of education in India.

- 687. Imagination in college.** A symposium, by G. E. Vincent, E. J. James, Frank Strong, W. L. Bryan. Nation, 98: 291-94, March 19, 1914.

- 688. Keppel, Frederick Paul.** Columbia. New York, Oxford university press, American branch, 1914. xvi, 297 p. illus. 12°. (American college and university series)

A book about Columbia university giving its history, describing its equipment as it exists to-day, how it is governed, its various departments, facilities for graduate study, the teaching staff—past and present, students and student life, and how the academic year is spent.

- 689. Langstaff, John Brett, ed.** Harvard of to-day from the undergraduate point of view. Cambridge, Harvard federation of territorial clubs at the Harvard union, 1913 [1914] 102 p. illus. 8°.

- 690. Passano, Leonard M.** The college as a commercial factory. Educational review, 47: 343-65, April 1914.

Part two of an article which appeared in the Educational review for December 1913. A plea against automatism in education.

- 691. Potter, Alicia.** The upward trend: Girard college, the legacy of a Mason. New age, 20: 312-19, April 1914.

A descriptive article on Girard college, Philadelphia, with sketch of the founder, Stephen Girard. Illustrated. See also editorial on p. 347-48.

692. Reynolds, J. H. Equitable treatment of credits from other colleges. *High school quarterly*, 2: 151-54, April 1914.
693. Sardou, Prosper. Les hautes études techniques et l'Université. *Revue internationale de l'enseignement*, 34: 216-21, March 1914.
694. Steffens, Lincoln. I. How to get an education even in college. II. How college students can educate themselves. *Harper's weekly*, 58: 9-11, April 11; 18-20, April 18, 1914. illus.
695. Taft, William Howard. The college slouch. Where did it come from? What does it indicate? Where may it lead a boy? *Ladies' home journal*, 31: 13, 67, May 1914.
Discusses "the lack of physical discipline, the lack of erect bearing, the indifferent manners and slouchy dress" among American college students.
696. Tombo, Rudolf. Comparative registration statistics. *Science*, 39: 454-56, March 27, 1914.
Emphasizes the point that no student should be counted in the enrollment of a university who has not offered graduation from a secondary school for admission.
697. A victory for democracy in education. The Vanderbilt university case decided against the church. By a special correspondent. *Independent*, 78: 24, April 6, 1914.
Decision of the Supreme court of Tennessee in the Vanderbilt university case. University freed from the control of the bishops of the Methodist Episcopal church, South.
698. Wall, Edward. Reminiscences of Princeton college 1845-1848. Princeton, Princeton university press, 1914. 35 p. 8°.
699. Westbrook, F. F. The provincial university in Canadian development. *Science*, 39: 407-18, March 20, 1914.
Address given on inauguration as first president of the University of Manitoba, Winnipeg, November 19, 1913. Discusses the scope, value and cost of provincial universities; the professional departments, etc.

SCHOOL ADMINISTRATION.

700. National education association. Department of superintendence. [Papers presented at the meeting held at Richmond, Va., February 22-28, 1914] *Journal of education*, 79: 313-19, 399-402, March 19, April 9, 1914.
Continued from issue of March 12.
Contains: 1. G. D. Strayer: The purpose, nature and conduct of school surveys.—2. C. N. Kendall: Standards and tests of efficiency in geography.—3. F. E. Spaulding: Tests of administrative efficiency.—4. L. P. Ayres: Differentiation in courses of study.—5. F. W. Smith: Organization of the practice school for training in the art of teaching and for professional study.—6. L. P. Cubberley and E. C. Elliott: Rural school administration.—7. J. J. Doyne: The preparation of teachers for rural schools.—8. T. A. Mott: Sex hygiene.—9. J. W. Carr: The teaching of sex hygiene in the public schools.—10. C. G. Pearce: Sex hygiene—what the schools can do (also in *Educational exchange*, 29: 29-32, April, 1914).
701. Pennsylvania state educational association. [Section meetings] *Pennsylvania school journal*, 62: 379-435, March 1914.

Department of City and Borough Superintendents.

Contains: 1. J. J. Palmer: Measurement of education, p. 379-81. 2. C. C. Green: Moral ideas and ideas about morals, p. 386-89. 3. J. A. Gibson: What are reasonable requirements of cultural attainment in schools? p. 391-94. 4. W. S. Deffenbaugh: Efficient administration in small city schools, p. 394-98.

County Superintendents' Department.

5. D. W. Armstrong: A few urgent needs of the country schools, p. 399-402. 6. C. E. Dickey: Rural school in the rural life movement, p. 406-407. 7. W. A. Patton: Better preparation of teachers, p. 413-14. 8. W. G. Dugan: Professional training for beginners in teaching, p. 414-16. 9. L. M. Jones: Training of teachers for country schools, p. 416-18.

Township Schools Department.

10. Irene Darr: The little alien, p. 421-24. 11. G. A. Bricker: Agriculture in the public schools, p. 424-27. 12. M. W. Garrette: More efficient higher education for the country boy and girl, p. 427-31. 13. H. W. Firth: Possibilities of township school, p. 431-33.

702. **Dyer, Franklin B.** Practical questions in the problem of supervision. Teacher, 18: 123-27, April 1914.

Abstract of Dr. Dyer's address at a meeting of Superintendents and principals of Philadelphia.

703. **Elliott, Edward C.** City school supervision. A constructive study applied to New York city. Yonkers-on-Hudson, N. Y., World book company, 1914. xiv, 258 p. 8°. (School efficiency series, ed. by P. H. Hanus)

This volume contains Prof. Elliott's contribution to the report submitted by Prof. Hanus to the Committee on school inquiry of the Board of estimate and apportionment of the city of New York, with a few changes, most of them unimportant.

704. **Hess, William Lyndon.** Corporal punishment. School news of New Jersey, 3: 5-6, April 1914.

The author advocates that every state in the Union should provide for corporal punishment in schools, but that the laws should give definite and explicit instructions as to how, when, where, and why corporal punishment must be administered.

705. **Hutchinson, J. Howard.** School costs and school accounting. New York city, Teachers college, Columbia university, 1914. 151 p. 8°. (Teachers college, Columbia university. Contributions to education, no. 62)

"The purpose of this investigation was to determine standard unit costs of public education. Thirty-eight cities were visited in order to obtain the data necessary."

706. **Mayers, Lewis.** The New York school inquiry. National municipal review, 3: 327-39, April 1914.

Shows some of the tangible results of the school inquiry; the compulsory attendance service has been reorganized; course of study has been and is being revised along the lines suggested by the committee's specialists, etc., etc.

707. **Poincaré, Raymond.** Public education. In *his* How France is governed, tr. by Bernard Miall. New York, McBride, Nast & company, 1914. p. 279-314.

708. **Springer, Isidore.** Teachers' year book of educational investigations. City of New York, Department of education, Division of reference and research, 1914. 12 p. 8°. (Bulletin no. 1)

"A brief summary of notable investigations, showing the progress made up to the present time in the determination of standards for the subjects of the school curriculum, general intelligence, and school management and administration."

709. **Sutton, W. S.** Extension and improvement of county supervision. Texas school magazine, 16: 9-10, 29-30, March 1914.

710. **Vance, William McKendree.** How shall the superintendent measure his own efficiency? Ohio educational monthly, 63: 145-49, April 1914.

Read before the Department of superintendence, National education association, Richmond, Virginia, February 26, 1914.

711. **Welch, F. A.** How much tuition shall be charged in the public schools of Iowa? Midland schools, 28: 235-38, April 1914.

Deals exclusively with tuition in regard to high schools.

712. **Yocum, A. Duncan.** Determination of the course of study. Texas school magazine, 16: 14-15, April 1914.

Address at the meeting of the Department of superintendence, National education association, Richmond, Virginia, February 1914.

SCHOOL MANAGEMENT.

713. **Avent, Joseph E.** The relative system of grading. North Carolina education, 8: 8-9, April 1914.

An explanation of the relative system of grading students in the different subjects.

714. **Deffenbaugh, W. S.** Discipline in the elementary schools. West Virginia school journal, 43: 11-15, April 1914.

"Read at the Mannington meeting of the Monongahela Valley round table."

715. **Grupe, Mary A.** Some bearings for the teacher of recent studies of "school marks." Northwest journal of education, 25: 294-97, March 1914.

This article deals with the application and uses of the marking system.

716. **Lowe, L. A.** Discipline and individuality. Parents' review, 25: 161-76, March 1914.

Mental discipline in the education of the child must be fused with moral discipline. Mental discipline in its last analysis is the power of *concentration*.

717. **Partlow, Leo L.** Problem of waste in the grade school. Arkansas teacher, 2: 1-4, April 1914.

The author discusses first the causes of waste and then the remedies.

SCHOOL ARCHITECTURE.

718. **Beach, Wilfred W.** Selecting a school architect. American school board journal, 48: 9-10, 68, April 1914.

719. **Bruce, William C., comp.** Grade school buildings. Milwaukee, The Bruce publishing company [1914] 255 p. f°.

A collection of plates and plans of "simple and substantial" school buildings.

720. **Schoenfelder, L.** Amerikanische schulen. Schulhaus, 16: 105-22, heft 3, 1914.

Comments on American schoolhouses. Illustrated with a large number of views and plans.

SCHOOL HYGIENE AND SANITATION.

721. **International congress on hygiene and demography.** 15th, Washington, D. C., September 23-28, 1912. Proceedings of Section III—Hygiene of infancy and childhood: School hygiene. Washington, Government printing office, 1913. 487 p. illus. 8°. (*Its Transactions*, vol. 3, pt. 1.) (John S. Fulton, secretary-general, 16 West Saratoga street, Baltimore, Md.)

Contains: 1. Mary S. Macy: Instruction in child hygiene, p. 10-16. 2. I. S. Wile: A plan for teaching hygiene in the public schools, p. 17-22. 3. S. A. Knopf: Open-air schools and open-air instructions with breathing exercises in schools and colleges to prevent tuberculosis and other diseases, p. 22-38. 4. Grace N. Kimball: Some fundamentals of the hygiene of the teacher, p. 38-45. 5. E. G. Brown: Sex instruction and hygiene of boyhood, p. 55-68. 6. M. A. A. Rey: L'école de l'avenir, p. 103-16. 7. J. T. A. Walker: The routine disinfection of schools, p. 131-35; Discussion, p. 135-38. 8. Caroline Hedger: The school children of the stockyards district, p. 170-88. 9. A. T. Cabot: The management of tuberculosis among school children, p. 189-95. 10. Adolf Baginsky: Kinderkrankheiten während des schullebens, p. 195-208. 11. W. H. Burnham: Mental hygiene in the school, p. 209-16. 12. C. W. Crampton: The significance of physiological age in education, p. 224-36. 13. W. E. Chancellor: The relation of teacher and pupil, with especial reference to the education of immigrants and of their children in American public schools, p. 237-45. 14. Leo Burgerstein: Results to individuals from medical inspection, p. 245-55. 15. W. S. Small: Some important aspects of efficient medical inspection of schools—a school man's view, p. 255-64. 16. Helen MacMurchy: What medical inspection of schools can do for the teacher, p. 265-68. 17. T. A. Storey: A follow-up system in medical inspection, p. 268-72. 18. Helene F. Stelzner: Die schulärztin an den höheren mädchenschulen, eine sozial-hygienische forderung, p. 273-86. 19. H. L. Colt: The public school as a possible factor in preventing infant and child mortality, p. 286-89. 20. Konrad Cohn: The preservation of the teeth in schools in Germany, and the work of the German central committee for dental hygiene, p. 343-49. 21. S. A. Knopf: Dental hygiene for the pupils of public schools, p. 350-59. 22. J. W. Brannan: The prophylactic and therapeutic value of fresh air in schools and hospitals, including heliotherapy, p. 406-12. 23. Franz Boas: Remarks on the anthropological study of children, p. 413-20. 24. J. H. McCurdy: Physical efficiency tests during adolescence, p. 420-28.

722. **Cruickshank, Lewis D.** School clinics at home and abroad, with general introduction by W. Leslie Mackenzie. London, The National league for physical education and improvement, 1913. 171 p. illus. 8°.

723. **Davis, John M.** Idleness at the root of the tobacco evil in children. Wisconsin journal of education, 46: 70-73, March 1914.

Gives the conclusions drawn from observations which have been made in three small high schools for a period of seven years.

724. **Henneberg, H.** Ein beitrag zur masernfrage. Zeitschrift für schulgesundheitspflege, 27: 184-98, March 1914.

Discusses measles as a specially important disease of children of school age, and measures for control.

725. **Rapeer, Louis W.** The administration of educational hygiene. *American education*, 17: 396-402, March 1914.

An address before the Child hygiene section of the National education association meeting, Salt Lake City, July 1913.

The author gives "some suggestions in regard to a tentative standard plan for the administration of educational hygiene, with special reference to medical inspection."

726. **Stephani, G.** Internationaler kongress für schulhygiene in Buffalo, N. Y., 1913. *Zeitschrift für schulgesundheitspflege*, 27: 200-21, March 1914.

This article—one of a series on the International congress of school hygiene—discusses in some detail the papers on sex hygiene, crippled children, mental hygiene, medical inspection, physical education, conservation of vision, school lunches, Binet tests, etc.

SEX HYGIENE.

727. **Foster, William T.** Agencies, methods, materials, and ideals of sex education. *School review*, 22: 256-61, April 1914.

The idea of sex "must be spiritualized; the right education of the emotions is fundamental." Under the head of ideals the writer sums up many interesting phases of the subject. Says that "specialists" in sex education are undesirable as instructors of boys or girls, in or out of school.

This article forms the final chapter of *The social emergency, studies in sex hygiene and morals*, ed. by W. T. Foster. Boston, New York [etc.] Houghton Mifflin company [1914] 224 p. 12°.

728. **Grinstead, Wren J.** Reading for teachers of sex hygiene. *School review*, 22: 249-55, April 1914.

Gives lists of the best works on sex hygiene—general works, sexual psychology, biological and anthropological aspects of sex, etc.

729. **Hood, Mary G.** For girls and the mothers of girls. A book for the home and the school concerning the beginnings of life; with introduction by Sarah Louise Arnold. Indianapolis, The Bobbs-Merrill company [1914] 157 p. illus. 12°.

730. **Klemme, E. J.** Sex education. *School news and practical educator*, 27: 342, April 1914.

Adverse to the teaching of sex hygiene in the public schools.

731. **Lowry, E. B.** Teaching sex hygiene in the public schools. Chicago, Forbes and company, 1914. 94 p. 12°.

732. **Münsterberg, Hugo.** Sex education. *In his Psychology and social sanity*. Garden City, N. Y., Doubleday, Page & co., 1914. p. 3-68.

"Last summer I published in the New York Times an article which dealt with the sex problem. It led to vehement attacks from all over the country. The present long paper replies to them fully. . . . The advocates of sexual talk now have the floor; from now on I shall stick to the one policy in which I firmly believe, the policy of silence."—Author in Preface.

733. **Beppier, Agnes.** The repeal of reticence. *Atlantic monthly*, 113: 297-304, March 1914.

PHYSICAL TRAINING.

734. **National collegiate athletic association.** Proceedings of the eighth annual convention, held at New York city, New York, December 30, 1913. 92 p. 8°. (F. W. Nicolson, secretary, Middletown, Conn.)

Contains: 1. G. W. Ehler: The regulation of intercollegiate sport, p. 56-63. 2. James Naismith: Basket ball, p. 63-75.

735. ——— Report of Committee on the encouragement of intra-collegiate and recreative sports. . . . Presented at the eighth annual convention, December 30, 1913. 18 p. 8°.

736. **Demeny, Georges Emile Joseph.** L'éducation de l'effort; psychologie-physiologie. Paris, F. Alcan, 1914. 228 p. 12°.

737. **Dunn, Arthur Wallace.** Military camps for college students. *American review of reviews*, 49: 321-26, March 1914.

738. **Ehler, George W.** The regulation of intercollegiate sport. Mind and body, 21: 6-13, March 1914.
 "Read before the eighth annual convention of the National collegiate athletic association, New York city, December 30, 1913."
739. **Fauver, Edwin.** A suggestion for making required physical training of greater value to the college graduate. American physical education review, 19: 200-3, March 1914.
 "Read at the annual meeting of the Society of the directors of physical education in colleges, New York, December 31, 1913."
740. **Jordan, Caryl.** The Greek ideal in physical training. World's work (London) 23: 374-89, March 1914.
 Search for the Greek ideal. Work of Mrs. Roger Watts, who has endeavored to master the principles of Greek perfection in athletics. Illustrated.

SOCIAL ASPECTS OF EDUCATION.

741. **Greenwood, James M.** The social function of the school. Journal of education, 79: 372, April 2, 1914.
 Address at the Department of superintendence, National education association, Richmond, Virginia, February 1914.
742. **Sandiford, Peter.** Heredity and education. Child, 4: 509-17, April 1914.
 Also in School, 2: 491-94, April 1914.
 Such studies, says the writer, tend to make education increasingly democratic. Present system of education devised for the scholar, while little attention has been given to the "doer," the manual worker. Advocates a greater differentiation in schools, and a considerable reduction in the size of classes.

CHILD WELFARE.

743. **Fuller, A. C.** Community work for boys and its relation to public schools. School and home education, 33: 284-88, April 1914.
 Mr. Fuller is the inspector of state high and graded schools of Iowa. He describes the work at Washington, Iowa, begun by the Men and religion forward movement.
744. **Morse, John Lovett.** The care and feeding of children. Cambridge, Harvard university press, 1914. 53 p. 12°. (Harvard health talks)
 This series of talks presents the substance of some of the public lectures delivered at the Medical school of Harvard university.

MORAL EDUCATION.

745. **Brubacher, A. R.** Ethical training in the schools. School, 25: 301, April 9, 1914.
 The argument of Superintendent Brubacher, of Schenectady, New York, to rank ethical training in importance with history and English.
746. **Loew, Joseph.** Ethics in the public schools. American teacher, 3: 50-54, April 1914.
 Read before the monthly teachers' meeting, DeWitt Clinton high school, March 1914.
 In considering this problem the author has limited himself strictly to the practical question of what we can do, of a positive nature, to teach ethics.

RELIGIOUS EDUCATION.

747. **Huse, Raymond H.** The soul of a child. Cincinnati, Jennings and Graham; New York, Eaton and Mains [1914] 168 p. 12°.
748. **McElfresh, Franklin.** The training of Sunday school teachers and officers. New York, Eaton & Mains; Cincinnati, Jennings & Graham [1914] 230 p. 12°.
749. **O'Donnell, William Charles, jr.** Creed and curriculum. A discussion of the question, Can the essentials of religious faith and practice be taught in the public schools of the United States? New York, Eaton & Mains; Cincinnati, Jennings & Graham [1914] 119 p. 12°.
 First published as a series of articles in Educational foundations.

750. **Richardson, G. H.** The value of archaeological study for the biblical student. Open court, 28: 197-202, April 1914.

A bibliography is appended. Much misunderstanding of the Bible is due to the neglect of archaeological study. Says writer: "Fancies have given way to facts, and history has taken the place of myth."

751. **Temple, W.** Education and religion among working men. Constructive quarterly, 2: 188-96, March 1914.

Describes some interesting extension summer meetings at Oxford and Cambridge universities, England, where religious and social problems are freely discussed by clergymen and workingmen.

MANUAL AND VOCATIONAL TRAINING.

752. **National society for the promotion of industrial education.** Proceedings of the seventh annual meeting, Grand Rapids, Michigan, October 23-25, 1913. Peoria, Illinois, Manual arts press [1914?] 261 p. 8°. (*Its Bulletin*, no. 18) (C. A. Prosser, secretary, 20 West 44th street, New York, N. Y.)

Contains: 1. L. E. Reber: What laws for vocational education should Michigan adopt? "dual" or "unit" control? p. 15-26. 2. John Dewey: Should Michigan have vocational education under "unit" or "dual" control? p. 27-34. 3. A. D. Dean: State-wide compulsory continuation education, p. 40-54. 4. David Snedden: Summation of the discussion, p. 55-59. 5. Frank Duffy: The new Indiana law for vocational education, p. 60-65. 6. W. N. Ferris: What vocational education and vocational guidance mean to Michigan, p. 72-82. 7. W. C. Redfield: What vocational education and vocational guidance mean to the future of the country, p. 83-95. 8. W. A. O'Leary: How can the evening school best meet the needs of the wage-worker? p. 101-107. 9. C. R. Richards: How shall we study the industries for the purposes of vocational education? p. 111-21. 10. F. M. Leavitt: How shall we study an industry, from the standpoint of vocational guidance? p. 122-25. 11. Ida M. Tarbell: What industrial training should we give the average girl? p. 132-35. 12. Mrs. Eva White: The place of homemaking in industrial education for girls, p. 136-48. 13. Cleo Murtland: What the Society is planning to do for industrial education for girls and women, p. 149-55. 14. A. E. Dodd: What chambers of commerce can do for vocational education, p. 167-80. 15. E. W. Schultz: Cooperation of employers, p. 181-87. 16. W. M. Roberts: The development of part-time education in a large city, p. 203-16. 17. W. S. Field: Part-time schooling for the unskilled industries, p. 217-23. 18. S. O. Hartwell: Development of part-time education in the small cities, p. 224-29.

753. **Ayres, Leonard P.** Constant and variable occupations and their bearing on problems of vocational education. New York, Division of education, Russell Sage foundation [1914] 12 p. 8°. (Publication E 136)

Also in *School and home education*, 33: 277-80, April 1914.

754. **Bawden, William T.** The administration of state aid for vocational education. Report of a series of conferences of state officials held under the auspices of the National society for the promotion of industrial education. [Peoria, Ill., Manual arts press, 1914] 13 p. 8°.

Reprint from *Vocational education*, March 1914.

755. **Canada.** Royal commission on industrial training and technical education. Report of the commissioners. part 4. Ottawa, printed by C. H. Parmelee, 1913. xxv, 1639-2354, xxix p. 4°.

Contains results of the inquiry in Canada.

756. **Carlton, Frank Tracy.** The industrial situation. Its effect upon the home, the school, the wage earner, and the employer. New York, Chicago [etc.] F. H. Revell company [1914] 159 p. 12°

Industry and the school system, p. 61-77.

A presentation of the basic factors and principal phases of the recent industrial situation. Commended by the Commission on church and social service of the Federal council of the churches of Christ in America.

757. **Doster, James J.** Disciplinary value of the vocational subjects. High school quarterly, 2: 169-71, April 1914.

Read before the Association of Southern colleges and preparatory schools at the Knoxville meeting, 1914.

758. [Industrial education in China. A symposium] Chinese recorder, 45: 138-58, March 1914.
Articles contributed by C. T. Wang, D. T. Huntington, Emily S. Hartwell, Ernest Stephens, etc.
Discusses industrial schools as a form of mission work; value of industrial training; methods of instruction; sociological and industrial aspects of the question, etc.
759. **Keogh, Sir Alfred.** The relations of science and industry. Educational times, 67: 190-92, April 1, 1914.
Describes the work of the Imperial college of science and technology, London. Scientific education in England, and its possibilities.
760. **Knox, C. W.** Manual training for agricultural schools. Manual training magazine, 15: 288-91, April 1914.
Manual training should be adapted to local conditions. Gives list of necessary materials for schools.
761. **Magnus, Philip.** Vocationalism. Nineteenth century, 75: 526-37, March 1914.
Vocational education question in England. Lays emphasis on the introduction of vocational teaching in the lower-grade schools. Says that such instruction should always be associated with general education; provision should be made in the daytime for the further instruction, on strictly practical lines, of all children between the ages of 14 and 16.
762. **Mann, C. R.** What is industrial science? Science, n. s. 39: 515-24, April 10, 1914.
Presented at the meeting of the Central association of science and mathematics teachers at Des Moines, November 29, 1913.
763. **Prüfer, Johannes.** Friedrich Froebel und die arbeitsschulidee. Arbeits-schule, 28: 65-77, March 1914.
Relation of Froebel to the *arbeitschule* movement.
764. **Riordon, Raymond.** An outdoor school for boys, where development is gained from work as well as books. Craftsman, 26: 67-71, 92, April 1914.
Work of the Raymond Riordon school, N. Y. A plea for "constructive activity." Writer says that "constructive activity cannot be such without correlation of the intellectual, the academic, with the manual and the industrial."
765. **Shields, Thomas Edward.** Vocational training. Catholic educational review, 7: 346-59, April 1914.
The author discusses some recent articles on the subject. He thinks that "premature industrial training can only result in arrest of development, in rigidity of mental structure, and in a lowering of the industrial efficiency of the nation."
766. **Taylor, Edwin L.** The adaptation of manual training to community needs. Manual training magazine, 15: 263-74, April 1914.
Advocates an increase in the time devoted to manual training, thereby causing an increase in the materials used. It will then become necessary to make the manual-training department self-supporting to a large extent, which will automatically establish a high standard of workmanship. Shows results accomplished at Gary, Indiana; Plattsburgh, New York, etc. Says: "'Order-work' undertaken in the school shop is proof positive that manual training has in reality been adapted to the needs of the community."
767. **Thomas, F. W.** The apprentice schools of the Santa Fe railway system. Western school journal, 30: 102-106, April 1914.
A paper read at the meeting of the Department of superintendence of the National education association, Richmond, Va., February 25, 1914, by the Supervisor of apprentices of the Santa Fe railway system.

VOCATIONAL GUIDANCE.

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RURAL SCHOOLHOUSES AND GROUNDS

By FLETCHER B. DRESSLAR

PEABODY COLLEGE FOR TEACHERS
NASHVILLE, TENN.

He- - - - -
De- - - - - 1914

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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, June 20, 1914.

SIR: Among the greatest needs of the rural schools of the United States is that of better houses. Most of the older houses are cheap, ugly, uncomfortable, insanitary, badly ventilated, poorly heated and lighted, with no conveniences for school work, and with inadequate and filthy toilets and privies, or with none. In many places abandoned churches and cabins no longer fit for use as homes are given over to the schools, somewhat as outgrown, outworn, and cast-off clothing is given to paupers.

Since the beginning of the recent revival of interest in rural schools millions of dollars have been expended annually for country schoolhouses, and expenditures for this purpose have grown larger from year to year. Some of the newer buildings are large and relatively costly, but many, probably most, of them are built with little or no reference to architectural appearance, to the local needs, or to the principles of sanitation and the health requirements of growing children.

Schoolhouses are not only the temples which we erect to the god of childhood; they are also the homes of our children for a large part of the day through the most plastic years of their lives, the years in which they are most responsive to impressions of beauty or of ugliness, and when their environment is, therefore, most important. These houses should, therefore, be planned and built not only with the feeling of reverence with which all temples and other sacred buildings are erected, but also with that care for health, comfort, and convenience which we exercise in the building of our homes. It is economic waste of the worst type to spend annually hundreds of millions of dollars in money for schools and hundreds of millions more in the time of children and then fail of the best results because of bad construction and poor equipment of schoolhouses. It is worse than economic waste to destroy the health and lives of children through failure to observe simple and well-known sanitary laws. The places to which children come to gain preparation and strength for life and its duties should not prove to be hotbeds for the seeds of disease and death. The school improvement leagues of the Southern

States have taken for their motto—"For our schools: Health, Comfort, and Beauty." This might well become the motto for all who have to do with the planning and building of schoolhouses.

Within the last twenty-five years there has been a remarkable improvement in the school buildings of cities and large towns and in the buildings for county and township high schools. Many of these now approach the ideal. A bulletin of this bureau, *American Schoolhouses*, issued in 1910, has had a wide circulation and has proved very helpful to school boards and architects. The eagerness with which it was received, and the continued requests which come to this office for it, indicate both the need and demand for it. There has been an even greater need for similar help for school officials and others responsible for the building of schoolhouses of one, two, three, or four rooms in rural communities. To give this help the manuscript transmitted herewith has been prepared by Dr. Fletcher B. Dresslar, special agent of the Bureau of Education and professor in the George Peabody College for Teachers, Nashville, Tenn., with the cooperation of the joint committee of the National Council of Education and the American Medical Association on health problems in education, which committee accepted the material of this manuscript and submitted it as its report to the National Education Association at its meeting in Salt Lake City on July 7, 1913. The manuscript is the result of careful and prolonged study of rural school architecture with constant reference to economy and the highest degree of utility. I recommend that it be published as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

INTRODUCTION.

[Report on Health Problems by a Joint Committee of the National Council of Education and the American Medical Association.]

In 1911 the National Council of Education appointed a committee on health problems in education. From the time of its appointment this committee has worked in cooperation with a special committee of the American Medical Association, and the fund available for the work of these health committees has consisted of small appropriations from the National Education Association and an equal amount appropriated each year by the American Medical Association.

At the meeting of the department of superintendence of the National Education Association, held in St. Louis in February, 1912, a general report on health problems in the schools of the United States was presented and discussed.

At the meeting of the National Education Association in Chicago, July, 1912, the topic "Sanitation of Rural Schools" was selected for the two committees mentioned for their special study.

During the spring of 1913 a field secretary, employed by the two committees acting as a joint committee, made a careful statistical and photographic survey of about 100 rural schools in four Eastern States. This information has been placed at the disposal of Dr. F. B. Dresslar, to be used, in addition to the extensive body of material which he has gathered, in the preparation of a special bulletin on country schoolhouses.

The following general propositions have been approved by the joint committee of the National Council of Education and of the American Medical Association:

It is the conviction of the joint committee that there is no more important health problem in education than that which relates to the sanitation of the rural schools.

The one-room country school is the oldest and most primitive type of school in this country.

More than half the school children of the United States are educated in rural schools.

The country-school child needs a healthful environment quite as much as the city child.

In general, good architecture and good sanitation have been much more carefully studied and much more frequently secured in the school of the city than in the school of the country, but the sanitation of the rural school is in every respect as important as the sanitation of the city school.

The problems are at bottom identical. Both the city child and the country child need fresh air and good light and clean, wholesome, and attractive surroundings; but the methods of securing these educational essentials are somewhat different in city and country.

A schoolhouse without an adequate playground is an educational deformity and a gross injustice to childhood.

Neglect of anything essential for health in construction, materials, arrangement, and equipment of the country-school building is an educational sin of omission, if not a social and civic crime.

The expense of the things which really affect the health of the pupil in school should be estimated in terms of child life, child health, and human efficiency, and only for convenience be reduced to dollars and cents.

The following features are considered most important for satisfactory sanitation of the rural school:

I. Good air.

(a) Supplied abundantly from outdoors in all weather.

(b) Not warmer than 68° F. in cold weather.

(c) Heated (but not overheated) and kept in moderate motion by the operation of a jacketed stove or a properly arranged furnace heater.

Outdoor air is the most valuable tonic known to man, and acts constantly not only through the lungs, but as a continuous air bath affecting the entire surface of the body. Ventilation is therefore the most important feature in the sanitation of the school. A vitiated atmosphere lowers the vitality, increases the susceptibility to and the severity of disease, and decreases the physical working power of the individual. Although it does not produce sudden death, it inevitably shortens life.

II. Cleanliness.—Cleanliness not only exerts a powerful influence upon physical health, but also produces important effects almost directly upon minds and morals.

III. Water, pure and abundant.

(a) Water should be as free, as health-giving, and as available as the air.

(b) A sanitary drinking fountain should be furnished in every rural school.

IV. Disposal of sewage.—Provisions for toilet accommodations and sewage disposal in every rural school should satisfy all essential sanitary requirements.

V. Lighting.

(a) Light should be abundant and effectively controlled.

(b) Windows should be located at left or at left and rear of the schoolroom; they should extend to the ceiling and provide a lighting area equal to one-fifth to one-fourth of the floor area.

(c) Light should be controlled by double shades.

(d) Direct sunlight should have access, if possible, to every schoolroom some time during the day.

VI. Hygienic furniture, books, and materials.

(a) Desks and seats, whether fixed or movable, should be individual, separate, adjustable, clean.

(b) Books and other materials should not only be sanitary, but should be attractive enough to stimulate a wholesome response from the pupils.

VII. Screening against insects.—Mosquitoes may convey germs of malaria and yellow fever. Flies may convey germs of typhoid, tuberculosis, infantile paralysis, and perhaps other diseases. Fleas may convey bubonic plague. Ticks may convey Rocky Mountain fever. Every schoolhouse and privy should be effectively screened against mosquitoes and flies.

VIII. Location, site, surroundings, and grounds.

(a) With reasonable regard for the geographic center of the community, the rural school should be located on a site that is (1) well drained and away from stagnant water; (2) free from troublesome noise, unpleasant outlooks, or air contamination; (3) protected, so far as possible, from unfavorable weather conditions.

(b) School grounds should provide sufficient space for play and games.

IX. Cooperative work.—Sanitation of the rural school requires not only a healthful building and well-kept grounds, but intelligent and conscientious cooperation on the part of teacher and pupils for the preservation and improvement, where possible, of all the health values in the school and the school surroundings.

X. Social and moral welfare.—The arrangements and equipment of the rural school should not only conserve in every vital way physical health, but should also favor in all fundamental particulars the social and moral welfare of all the pupils. The rural school is the most effective agency for influencing all standards of country life.

The following are some of the reasons for the present deplorable conditions in rural schoolhouses:

(a) Low architectural and sanitary standards in rural regions generally throughout the country.

(b) Ignorance regarding the physical and moral effects of unattractive and insanitary school buildings upon the children and upon the community as a whole.

(c) False economy expressed by local school boards in failure to vote enough money to build and maintain suitable school plants.

(d) Lack of State supervision or assistance, which is usually necessary to maintain desirable standards.

Some important influences that are effective for obtaining and preserving the sanitary and other valuable features of rural schools are suggested:

(a) Assistance of the United States Bureau of Education and of the State departments of education in furnishing plans and instructions for construction and equipment of rural school buildings. The Bureau of Education in Washington is already supplying on request help of this kind, and a few State departments are demonstrating what may be done by supervision and support which aids without restricting.

(b) Supervision of rural schools by State departments of education with power (1) to condemn insanitary and wholly unsuitable buildings; (2) to give State aid to rural schools when the local authorities fulfill certain desirable and reasonable conditions.

(c) Inculcation of high standards of school sanitation in the minds of both local school patrons and of school authorities who control school funds and who administer the affairs of the schools. Public lectures in the schoolhouses on health topics.

(d) Introduction of effective school health courses in normal schools and teachers' institutes. Better education of rural school teachers, county superintendents, and rural school supervisors in the principles and practice of school hygiene and sanitation.

(e) Arousing the enthusiasm of rural school pupils for the improvement and care of everything in the school and its surroundings that affects health and happiness. Development among pupils of organizations such as "Pupils' boards of health," "Civic leagues," and "Health militias," for actual constructive effort.

(f) Cooperation with the rural school of organizations like the granges, women's clubs, county medical societies, and other groups so situated that they may further the cause of health and efficiency in the school.

(g) Popular education by attractive and reliable health information in the public press.

(h) Introduction of social demonstration of sanitary school standards and improvements by voluntary or paid demonstrators.

The two health committees acting as a joint committee express their appreciation of the valued counsel and cooperation of the United States Bureau of Education.

This bulletin has been approved and adopted by the joint committee as its general report on "The Sanitation of Rural Schools."

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RURAL SCHOOLHOUSES AND GROUNDS.

By FLETCHER B. DRESSLAR.

Chapter I.

SOME CONDITIONS AND OPPORTUNITIES IN RURAL LIFE.

The main purpose of this bulletin is to offer suggestions with reference to the construction of rural school buildings, especially from the sanitary and educational point of view. Before discussing the main topic, however, it is desirable to consider briefly the rural school as it should relate itself to the community, for the nature of this relation will have definite bearings on the size of the grounds, the construction of buildings, and their general utility.

Rural life in the United States is in many respects different from that of any other country and especially that of continental Europe. There is probably more isolation in farm life in this country than in any other progressive country of the world, unless it be in parts of the Canadian northwest. The European farmer lives, as a rule, in a village and goes to and from his farm daily. The village church, the public garden, and the public halls give him opportunities for society and fellowship during his leisure hours. Cooperation, companionship, and social solidarity bring satisfaction and contentment. Such opportunities are not to be had in many of our rural communities at any cost.

The houses of most American farmers have not resulted from careful planning, either with reference to beauty or convenience, and least of all with due regard to the joys of life. They were built to meet temporary needs. Habit has fastened upon our rural communities such types as were thus developed, and these types persist long after the financial ability to build better and more beautiful homes has been acquired. It is not more expensive houses that are needed, but more intelligently planned homes, those which will contribute greater joy, comfort, and healthfulness to the family. Many farmers have made the blunder of building expensive houses with little thought and less planning for the essentials of beauty, comfort, convenience,

and pleasure. One farmer of this type, after saving and adding to his original farm until he owned 800 acres of very valuable land, recently built a big house. The house has no bath rooms, no central heating plant, no labor-saving methods of lighting, no water supply, no kitchen conveniences, no sleeping porches, no sanitary toilets, no laundry. Is it any wonder that his sons have gone to town to work in a shop or that his only daughter has preferred the life of a stenographer? A library was not thought of; opportunities for games and recreation never entered into consideration; and yet the amount of money expended in the construction of this house would have purchased these things and a more beautiful and usable house as well.

Many country people have failed to grow away from unhygienic practices about the home simply because there were no near neighbors to object to unwholesome conditions. Conditions wholly permissible, and even good, in a sparse settlement may become highly undesirable with the presence of greater numbers. The fact that there are few neighbors to view his back yard has kept many a farmer oblivious to the educational and moral significance of cleanly surroundings.

Here is a whole series of problems to which the country schools should address themselves. It will be a better sort of education for the children to use part of their time in considering how the farm home may be made more attractive, satisfying, and sanitary, than to use all their time on subjects which touch their life only incidentally.

On the other hand, farm life in our country has many elements of strength in it, and upon these elements we must build. In general it is a healthful life. Fresh air, hard work, with rest days scattered all through the year, plenty of food, and direct contact with nature have produced strong bodies possessing great resistance. The evil habits of dissipation have not fastened themselves upon country people as a class; and, despite many insanitary conditions, the death rate in the country districts is probably lower for all contagious diseases save four (typhoid fever, hookworm disease, influenza, and whooping cough) than in the cities. Vigorous health is the most effective weapon with which to fight against disease.

The claim has been made that the highest type of character can not develop in the country; that the stress and strain of city life are needed to purify, refine, and spiritualize. Be this as it may, it is certainly true that the foundation upon which the highest types of human character can be developed requires the training and development incident to life in the country. No foundation for learning and character is safely builded if it does not include in its elements that first-hand knowledge of nature and things, that many-sided training in practical affairs, and that all-round physical development which

country life emphasizes in such a positive and natural way. Most of the men and women who have enriched our national life and whose memories we revere have had just such early training and development as our country life afforded. On this basis of insight and initiative they were able to enter into the life of a city and utilize its special opportunities, and yet abstain from its degrading influences.

It would be false, however, to attempt to picture country life as free from all difficulties and discomforts, or to imagine that the only thing necessary to get the most out of life is to go to farming. The best of all things have never been brought together at any one spot nor included in any one calling. Many things which the city has are vastly superior to anything of like kind in the country; but it is just this need for bettering conditions that should stir all who are really seeking to reveal to our rural communities the possibilities of country life. Country life must be made more enticing, more beautiful, and more joyous.

The field of service of the country school must include the general needs and longings of country people. The rural schools must set themselves to the task of creating a more satisfying educational fellowship in country communities. They must bring people together for the sake of comradeship and for the sake of community interests. They must teach the economic, social, hygienic, and religious importance of civic unity and civic righteousness. They must make it plain to all the people that this is an age of cooperation and that we can not live unto ourselves without limiting our own happiness and endangering the success of others.

The public school is the only institution in which all are interested and through which all may cooperate. The schoolhouse door must swing open freely for all who would work for the public good, and the schoolhouse must be so constructed as to invite to its shelter all who seek for a larger vision in anything and everything that may contribute to the community welfare. Above the door of every rural schoolhouse in this land some such legend as the following should be inscribed and through the work of patrons and teacher its sentiment be woven into the fiber of the people: *This building is dedicated to the service of this community and to the common cause of a better life for all.*

Chapter II.

RELATION OF THE COUNTRY-SCHOOL PROGRAM TO THE COUNTRY-SCHOOL EQUIPMENT.

It is clear from even the brief analysis of country conditions in the preceding chapter that the rural school has before it a larger and more purposful program than it is now undertaking. There are opportunities for a new and difficult service, and these must be seized and utilized effectively if the country school is to measure up to the needs and demands of a prosperous and satisfying country life. What, then, are the requisites for the realization of this preparation for worthy service?

THE TEACHER.

1. Teachers for rural schools should be better and more specifically prepared for their work. A sad mistake is made both by the State and the community when the intellectual and moral guidance of the children is intrusted to those who themselves have gone little further along the paths of learning than the more advanced pupils whom they are called to instruct. A teacher whose knowledge of the facts and processes of learning is meager and sterile can not bring to any community, especially to a rural community, that lively interest and enthusiasm which will thoroughly commend her work. Before the rural school can reach its highest usefulness the standard of scholarship demanded by the State for teachers of such schools must be raised so that they will have at least a wider and more critical knowledge of the common branches of learning. But there are other important considerations in the preparation of a rural-school teacher. He or she must know more about country life and country work. A girl brought up in a city, educated in a city, and adjusted to city life, has no real understanding of the problems of a country school. The general custom of making rural schools in effect training schools for those who aspire to teaching as a profession is most unfortunate.

The normal schools of the country are partly to blame for this condition. Very few of them attempt to address themselves to the specific task of thoroughly preparing teachers to meet in a large way the responsibilities of the work of teaching in a rural school. Of late many normal schools, instead of wisely deciding to limit their endeavors to the preparation of elementary teachers, are dividing

their energies, mixing up their curricula, and spreading their work over such varied fields that nothing intensive and specifically vital is done. In general, normal schools should not undertake to train teachers for both secondary and elementary schools. They should devote their time either to high-school work or to elementary-school work, exclusively. Some normal schools in every State ought to give their time and efforts strictly to the training of rural-school teachers, and their whole curriculum should be centered about the needs and opportunities in rural schools; others should devote their time to the training of teachers for city schools; and still others, if there exists no better agency for this purpose, should dedicate their energies to the work of training teachers for secondary schools.

It has been said that one brought up in a city and thoroughly adjusted to city life has no real understanding of the problems of a country school. On the other hand, when such persons have specific training for country-school work and are possessed of ability to make the most of their environments, they are often more efficient than those born and reared in the country. The latter are habituated to the routine of country life, and they are often thereby prevented from seeing things from a different point of view. City experience and the educational and social refinements generally associated with it will be of very great service if, in addition, life in the country is thoroughly understood and its spirit appreciated.

The purpose here, however, is not to outline in detail all that a country-school teacher should know about country life, but merely to call attention to those phases of her preparation that have a bearing on the sort of schoolhouse and grounds that must be furnished for her.

The rural school teacher should have a liberal knowledge of the science and art of agriculture, for this is the paramount economic interest in the country. A thorough and practical knowledge of agriculture will help a teacher who has any power of imagination to see things not as they are, but as they should be. Whenever a country-school teacher says, "This community is so backward and so set in its ways that I can do nothing" she shows that she is not liberally educated in the best sense of the term. The chief trouble with the teaching of agriculture in our country schools is that the teachers know next to nothing about the real thing. They may have a smattering of book knowledge, but if they have no power to apply it to the conditions in their community their knowledge will count for naught. There are teachers who can talk volubly of the growing of corn, but who would be unable to select the best ear from a bushel, or to test, in any conclusive way, its germinating power. There are teachers who can expatiate on the value of leguminous plants but who could not, in the open, distinguish alfalfa from ragweed.

On the assumption that it is possible to get teachers who do know, how can they successfully teach agriculture in a country school with no ground to prepare or to cultivate? The average country-school lot is not one-tenth large enough, and even school lots that are large enough are generally ill-adapted to agriculture. A few teachers have had sufficient imagination and initiative to rent or borrow a plat of land adjoining the schoolhouse and to do some real farming and teaching thereon.

Three acres of arable land connected with a rural school could be made to pay a good profit, not only as a laboratory for teaching purposes but in actual money returns. The reader is possibly saying to himself: "This is all theory, for crops must be made during vacation, and then the teacher is gone and there is no one to look after them." But suppose the teacher has impressed the people with the fact that she knows, and is there for a real purpose besides drawing her salary? She will then spend part of the winter months determining what is best to do with that plat of ground; what will give the best educational and financial returns to the community; what preparation the soil will need; and what seeds are to be selected and tested. Suppose she thus plans during the winter the work and cultivation to be carried on during the vacation, makes out a definite program, and then appeals to the larger boys and girls and also to the men and women of her community to volunteer to carry out the work as directed? Here is a chance for a new kind of "Corn club;" a chance to work for the common good and not simply for one's self; both kinds of club are needed. Here is a chance also for a community "Tomato club" to be undertaken for the benefit of the school and with resultant benefit to the individual. Each of these cooperative efforts could and would bring social contacts and social pleasures of the kind the country needs.

There is a rural school "farm" in North Carolina where a plan very similar to the one here suggested has been of such influence on the neighborhood that young women who had never before thought of working in the field entered into this sort of community labor with great zest and with a sense of new-found joy.

"What will you do with the money from school crops?" Devote it to the interest of the school. Buy baseballs, tennis rackets, and tennis balls; paint the schoolhouse; build sanitary toilets; build a neighborhood clubhouse; buy a piano or an organ for the school; buy books for the whole community to use; equip manual-training and domestic-science rooms; lengthen the school term; increase the teacher's salary.

All this has been said mainly for the purpose of reenforcing the appeal for larger and better grounds for rural schools from the point of view of social service and of the actual needs of community teach-

ing. There are other reasons why school grounds should be larger; these will appear in the chapter on the location of country schoolhouses. It is enough to indicate here that even if we had teachers specifically prepared to do what the country schools need, neither the grounds nor the buildings are adequate. A new and broader purpose for country schools demands a new sort of equipment in grounds and buildings, and it is hoped that this bulletin may suggest at least some of the necessary changes.

THE CURRICULUM.

2. The fundamental tools or implements of education are comprised in a knowledge of reading, writing, and mathematics, and a good control of the mother tongue. All the rest may be acquired by use of these and by orderly observation. One who can not count and calculate with precision is unable to deal effectively with the results of his observation. One who can not read, write, and spell is debarred from entering into the heritage of his own literature—moral, scientific, religious, æsthetic, or philosophic.

Despite all the attacks on the country-school curriculum, the essential tools for educational progress are generally comprised in it. Note that these fundamentals are called tools. A tool always implies material upon which it may be used. A knife would be meaningless if there were nothing to cut. Arithmetic would be equally useless if there were nothing to count and no numerical relations to calculate. It would be a poor policy for a joiner to instruct his apprentice simply in the manipulation of saw, chisel, or square rather than to teach him the use of these tools through the cutting, shaping, and fitting of timbers designed to serve a real purpose in life. Every country schoolhouse should have a workshop where boys and girls can put to test their arithmetic and reading and drawing and all the other educational tools which they are supposed to learn to use.

Here is a problem that will teach more real arithmetic, or at least make this subject more actual and interesting, than all the puzzles found in the regulation textbooks: "What will it cost to build in this community the sort of a barn needed on a good farm of 100 acres, with 75 acres under cultivation?"

This is a practical problem for a country boy. Before answering it he will first have to make drawings and plans for the barn. These drawings and plans will represent, if he goes at the problem intelligently, all his knowledge and ideals of that part of farm life which must center in or about a barn. He will have to determine how many horses it would be best to keep, and how they should be housed. He will need to consider the number of cattle such a farm will need, and how best to care for them. Problems will arise in con-

nection with the amount of storage space needed for hay and grain and with the proper location of rooms. He will need to figure on shed room for wagons, and farm tools of all sorts, and to consider how these can be cared for with the least trouble and the greatest economy. He will be forced to give thought to the building location, to the water supply, to the care of the compost, and to all the included hygienic relations of the home. All this will require calculation of the most painstaking sort. But he has not yet begun to build. When his plans are matured he will need to figure out the amount of material needed and the cost in the local markets of this material. Here questions of local economics will come into prominence. The price of labor, skilled and unskilled, the expense of hauling—all of these will enter into the calculation. He will find before he has finished that he has in these and in a score of other ways been brought face to face with the whole problem of the farm and home life that centers about the barn.

A teacher who sets such a problem should know many things of practical importance to farm life not learned in the schoolbooks. She will be greatly aided in making such work interesting and helpful if she has gathered many suggestive plans and descriptions of farm barns and of the common conveniences which ordinary ingenuity may suggest and construct.

The arithmetic and other subjects involved in the solution of this problem might be extended to the planning and construction of a house. Here the girls will be more interested. The planning of a convenient, beautiful, and sanitary home is about the last thing thought of in our rural-school curriculum. But the farmhouse is one of the most important factors in country life. Here is the center of family life, for good or evil. Here conveniences, sanitation, and comfort pay the highest dividends. The farmhouse need not be large and expensive. It may be beautiful, sanitary, and convenient, oftentimes at less cost than otherwise. A log house can be made beautiful, sanitary, and convenient if those who plan know that beauty and health are fundamental, and that it is not necessarily expensive to meet these demands.

There should be a collection of suggestive plans for all grades of country houses in the libraries of country schools. These can be gathered from magazines, post cards, photographs, and drawings made directly from successful houses. They can be made intensely interesting to the larger boys and girls, and through them much of the theoretical work of the curriculum can find application.

All this suggests certain needs in school buildings. If there are no good places for drawing, for making plans, or for working up such plans into models, it is almost impossible for the teacher to follow the line of work suggested above. Therefore, when the appeal is made

for workrooms and libraries in this bulletin, the reader will understand that this is done in order to hasten the time when this larger program for country schools can be successfully undertaken. With a building planned to meet these suggestions, many other adjustments helpful to both teachers and children will be easily made.

THE TEACHER'S HOME AND FARM.

3. The time is coming when the people will learn that it pays to hire competent men as teachers of country schools and to furnish them homes on the school grounds. Then a real experimental school farm will be easily managed and all the needs of the community can be centered in a school curriculum. It would be easier to arrange for consecutive and constructive work when conditions are such that a country teacher can see the possibilities of a useful and prosperous life ahead. To allow the schoolhouse and school grounds to lie idle all summer and to depend on young and inexperienced teachers for the educational leadership of the community is poor economy. The one paramount need in most rural schools is a teacher with ideals and with the desire to focus the attention and interest of every man, woman, and child in the district on the work done in and about the schoolhouse.

Suppose there is a small school farm, a home for the teacher, and a building arranged to accommodate the intellectual and social needs of the community, what could a virile man in charge, employed for the year instead of for a few months, do under such conditions? He could make the farm pay half of his salary and at the same time make it the most effective teaching agency connected with the school. He could develop a community interest and pride in the school now sadly lacking in most country districts. He could be the social guide for all the young people, those out of school as well as those in school. If he were musical, and most certainly he ought to be, he could develop some sort of a neighborhood orchestra and chorus which would furnish an incentive and a means of entertainment for all religious and social gatherings.

The village schoolmaster of Germany has a house and garden on the school grounds. He settles there for a life's work and is, next to the priest or pastor, the most influential and useful man in the village. But he must have had a thorough training in all the things that will make for joy and happiness in that community. First, he must be a good musician. He must be able to play the violin and the pipe organ, and in addition he must be able to sing and conduct an orchestra and a chorus. This does not mean that he must be able to do these things in a mere passable fashion; he must be a skilled musician. During the many years of his special train-

ing as a teacher his musical studies are carried on in a most exacting way, and if he fails to develop good ability he will not receive an appointment as a village schoolmaster, even if all other requirements are met. What is the result? He has an orchestra made up of old and young people in school and out of it. He is the leader of the church choir and of congregational singing. His help is demanded wherever music is desired. It would be almost impossible to overestimate the influence his musical ability gives him with his people.

In the United States we can not move our isolated farmhouses into villages, and it is doubtful if the work of our country schools can be made as effective in this way as that of the village schools of Germany. But as long as we neglect to give the country people the uplifting and harmonizing influence of music, so long will it be more difficult to unite a community into a social and civic body. Music is preeminently a social art, and is most satisfying when enjoyed in common.

If we could have larger school grounds, a school farm, a home for the teacher, and an all-year-round social and educational center in the community, there would be fewer desertions from farm to city.

Chapter III.

HYGIENIC CONDITION OF TYPICAL RURAL SCHOOL- HOUSES AND GROUNDS.

In investigating the hygienic conditions of typical country school-houses in 18 States, the following method was used: With the cooperation of the State superintendents, two typical progressive counties in each State were selected. To the teachers of the rural schools in these counties the following personally addressed letter and list of questions were sent:

[LETTER TO RURAL SCHOOL TEACHERS.]

The United States Bureau of Education is very desirous of getting reliable information concerning the hygienic condition of typical country schools and asks your cooperation in the work. Two counties in your State have been designated by your State superintendent from which this material is to be gathered.

Please fill the inclosed question form as carefully as you can and return it in the envelope inclosed, which requires no postage. Get one or two of your larger boys or girls to help you to do the measuring and calculation required. They will enjoy it, and it will do them more good than an ordinary lesson in arithmetic. Make your answers as clear as you can, yet short. If you have a photograph of your building, or can get one, it would help us very much if you would send us a copy. The bureau is planning to publish a bulletin on country schoolhouses and is hunting for all the good features available. If you desire it, a copy of the bulletin will be sent to you when ready.

Please answer the questions fully, whether your conditions are good or bad. No individual answers will be published, and neither praise nor blame will appear charged to any persons or locality. We simply want the facts as they are, and we trust that you will help us immediately.

SURVEY OF THE HYGIENIC CONDITION OF RURAL SCHOOL, DISTRICT No., COUNTY
OF, STATE

SURVEY MADE BY, *Teacher.*

School grounds: Length, feet; width, feet.

Size of playground, square feet; space for garden or agricultural work, square feet.

Ground: Level?; rough or hilly?; well drained?; trees?

Building: Wood?; brick?; cement?; stone?; new?; old?

Size of schoolroom: Length, feet; width, feet.

Light from one side?; two sides?; three sides?; four sides?

Toward what direction do the windows face? East?; west?; north?; south?

From what sides do your pupils get light? Left?; right?; rear?; front?

What is the total area of all the windows? square feet.

Floors: Single thickness?; double?

Blackboard: Area, square feet; where placed?; height from floor? feet; of what material?
 Are the desks single?; double?; adjustable?; sufficient in number?.....
 Have you window shades?; what color?; do they run up from the bottom or down from the top?
 What is the color of the schoolroom walls?
 Have you cloakrooms? One?; two?; none?
 Briefly describe any special means you employ to secure ventilation.....
 Have you tested the eyesight of your pupils?; if so, by what method?.....
 Have you tested their hearing?; if so, by what method?
 What is your water supply? From well on school ground?; from spring?; how far distant?
 Do you consider your water pure?; are you furnished drinking fountain?; individual cups?; or two cups for all?
 How do you heat your schoolroom? Common stove?; jacketed stove?; where located?; do you burn wood or coal?
 Do you have special janitor service?
 Do you use dry sweeping?; sprinkle floor with water?; scatter damp sawdust on floor before sweeping?; use any prepared dust-gathering material?; are your floors oiled?; do you use a feather duster, or dust cloth, to keep the furniture clean?
 Do you have a thermometer?; what temperature do you strive to maintain in your schoolroom?
 At what hour do you begin school in the morning?; at what time do you dismiss for the day?; how much time do you give for recess in the morning? in the afternoon?
 Toilets: One?; two?; none?; are they protected against flies?; are they made with deep excavations?; no excavations?; septic tank disposal?; washout system?; how far are they from the well, if you have one?
 Do you do any of your regular school work out of doors during pleasant weather?
 Do you have medical inspection of your school children? If so, how is it managed?
 Has any provision been made in your county or township for the care of the teeth of school children? If so, describe it.
 Do you wish a copy of the bulletin on country schoolhouses when completed?

These questions were sent to the teachers, instead of to the county superintendents, for two reasons: First, the questions required more specific and definite facts than a county superintendent could ordinarily command; second, it was hoped that through these questions many suggestions would be lodged in the minds of the teachers and that thereby some good might be accomplished in addition to getting the facts.

In all, 3,300 letters and lists were sent out, and about 50 per cent of all these were filled out and returned. The results here presented were tabulated from 1,296 returns, typically representative of the 18 States. Naturally, some who replied did not answer all the questions; hence, the figures for the different topics vary slightly.

GROUND.

Out of 1,245 returns giving figures regarding the area of school grounds, 727, or more than 58 per cent, reported less than 1 acre, and nearly half of this number, or 321, had only $\frac{1}{2}$ acre or less. Only 124 of all these schools were furnished with grounds equal to 2 acres or more. Clearly the movement to adapt rural schools to rural life will

amount to very little unless our rural schools are furnished more ground for their needs. It seems foolish to expect any sort of worthy teaching of agriculture to emerge from our district schools under the conditions shown.

With regard to the character of the ground as represented by the returns, it seems that of 1,283 rural schools of this group, 1,030 have comparatively level land, and that 253 are situated on hilly, rough land. About the same proportion of school grounds, or 1,014, are reported as well drained, and 234 are wet and undrained. There are one or more trees on the lots of 930 schools, while 340 schools report no trees at all. The returns do not show whether the trees reported are mainly natural forest trees or whether they have been planted—probably the former.

Measurements of the school grounds were taken in feet and have been reduced to acres in making the tabulation. The reason for asking for returns in feet was to forestall guessing as to the size of the school lots. It should be remembered also that the dimensions given include the ground upon which the building is situated, as well as that about the building.

THE BUILDINGS.

In order to get some composite notion of what a rural schoolhouse is at this date, the request called for returns on the material of which the buildings are made. Wooden buildings number 1,134, or 91 per cent; 110, or less than 9 per cent, are of brick; 37 are built of stone, and 7 of cement. Of the total number, 464 are listed as new buildings, and 805 are tabulated as old. More than 63 per cent of the buildings included in this survey are old, and a little less than 37 per cent are new. But the term "new building" does not in any sense of the word mean buildings constructed according to modern demands of school hygiene. The hatchet-and-saw carpenter of the country is generally unable to read architects' drawings or to follow specifications. Rural schoolhouses are, for the most part, attempts to copy some existing school in the township or county. Therefore, "new buildings" are generally very little better adapted to their purpose from many points of view than old ones. Especially is this true in the older sections of the country.

LIGHTING.

When we attempt to look on the inside of rural school buildings, the following significant facts come to light: Only 25 classrooms out of 1,244 received light from but one side; 880 from two sides, 346 from three sides, and 35 from four sides. In other words, about 2 per cent of the buildings under consideration received the light from

one side. The prevailing custom, representing over 70 per cent, is to have light from two sides. But this tells less than half the story of the lighting of the school rooms. Fourteen per cent have less than one-tenth as much glass area in the windows as floor surface within the room. A little over 46 per cent have an area of glass surface between one-sixth and one-tenth as great as the floor surface. Combining these, we are able to see that more than 60 per cent of all the rural schools included in this survey have an insufficient amount of glass surface to furnish proper lighting, even if the windows were properly placed in all particulars.

Under a separate heading, facts were gathered relative to the proper use of window shades, and, although the returns are not sufficient to justify a final decision, it is plain that in the great majority of schools the shades are badly placed and can not be easily adjusted to suit conditions. To sum up then, investigation of the lighting problem shows that windows are often wrongly placed; that insufficient glass surface is furnished; and that the best arrangement of window shades is not often found. It is probably not far from the truth to say that classrooms in rural schools receive only about one-half the light they should, and that even this light is improperly distributed.

FLOORS.

With reference to the floors of school buildings, the returns show that a little less than one-half (611) have single floors, and that the rest have some form of double floors. The importance of double floors for school buildings in any part of our country needs to be emphasized. Naturally, in cold climates double floors are more necessary; yet even in the South, during periods of sharp weather, children are likely to suffer from cold. It is almost impossible to equalize the heat in schoolrooms during cold weather if the floors are not practically air-tight. A warm room acts as a sort of exhaust to gather drafts of outside air from all directions, especially up through the floor, and therefore the temperature at the floor line, unless the floors are double and properly deadened, will almost invariably be several degrees lower than at the breathing line. This is one of the reasons why children and teachers complain when the thermometer goes as low as 65° at the breathing line. If the floors are properly protected and the heat of the building is properly distributed, it would be comparatively easy to reduce the temperature in most of the schoolrooms without objection, and to gain thereby from the point of health. Many of the rural schools reporting single floors are not only uncomfortable, but dangerous in cold weather, because of the drafts and the dust brought up in this way.

JANITOR SERVICE.

As to the methods of caring for the schoolhouse, especially the floor, out of 1,262 replies, only 213 teachers stated that there was any janitor service furnished. In other words, 1,049 teachers out of 1,262 are required not only to teach school in such houses, but also to keep their school buildings clean. As a result, the following methods of cleansing are used: 548 sprinkle the schoolroom floor with water before sweeping, 417 use dry sweeping, 227 use damp sawdust or other dust-absorbing materials, and only 199 have oiled floors. It seems unnecessary to discuss these facts at any length, but it appears that 965 schools, out of 1,391 that answered this question, must have dirty, dusty floors for a large part of the year, not to mention the dust on benches, desks, window sills, and all possible ledges throughout the room. It does seem almost inexcusable that a teacher should not at least be furnished sawdust by the use of which she may be able more easily to cleanse the floors and prevent the great clouds of dust that must necessarily arise from the sort of sweeping here indicated.

WATER SUPPLY.

The water supply for country schools is far from satisfactory. Of 1,258 schools reporting under this general heading, only 567 are supplied with a well or with running water on the school ground; 691 schools, or nearly two-thirds of all reporting, have to depend on springs and wells outside of school grounds; and 266 schools depend on carrying water from wells or springs located more than one-quarter mile from the schoolhouse. Obviously, under such conditions as these, the children are deprived not only of fresh water, but also of clean water. Where no janitor is furnished, the children or the teacher have to carry the water. It would be much more sanitary and acceptable for each child so handicapped to bring a bottle of water from his home for his own needs, and in a few places it has been necessary to resort to this method.

The receptacle for the water in the schoolroom is generally an open bucket, and approximately half of those reporting use a common drinking cup or dipper. Recently there has been a rapid growth in the use of individual drinking cups. This is due chiefly to the laws in many States making it mandatory to avoid common drinking vessels. In this connection, it needs to be said that individual drinking cups in rural schools are altogether inadvisable. They can not be kept in a sanitary condition, and despite all a teacher can do, they will be indiscriminately used. The only safe method is the bubbling fountain connected with a covered water can or jar, or, better still, with a pressure tank supply. These are found in only 5 of the schools reporting.

TOILET FACILITIES.

The toilet facilities of the rural schools are, generally speaking, not only a disgrace but a menace to public health and decent morals. Not over 1 per cent of rural schools are furnished with completely sanitary toilets. This is a liberal estimate. From the descriptions given in the returns, it has been comparatively easy to decide between those which are passably sanitary and those insanitary. The figures are these: Out of 1,276 replies examined, 50 schools have no toilets at all; 52 have only one; and the rest, or 1,174, have two. Nearly half (601) have no pit at all for the refuse, and 631 have an open pit. Not 20 in the whole number are protected against flies or can be cleaned with any sort of success. The Rockefeller Sanitary Commission for the Eradication of Hookworm Disease has recently concluded that it will inevitably fail in eradicating this devitalizing disease unless rural communities institute some form of septic toilets, both for residences and for schools. Likewise, there is little hope of keeping down typhoid epidemics when toilets are insanitary or wholly lacking. The biggest rural problem is that of domestic and personal hygiene. The rural school ought to lead in the health movement; but the facts set forth help us to realize how far we are from what ought to be. Every State and county board of health having to do with rural or village conditions should institute a persistent campaign for better hygienic toilets. Models should be available for every community. Boards of health are already rendering a great service in this direction. They are doing much to interest and instruct in matters of health, but they can not reach all the people, and teachers and county superintendents should feel it their special duty to carry this gospel everywhere.

OTHER ITEMS.

A little over half the schools in the county have some form of slate blackboards, and the rest have painted wood, painted canvas, painted plaster, or some one of the various preparations of paper or pulp. Nearly one-third have their blackboards set 3 feet or more above the floor, too high for the primary classes to use properly. School work begins at 8 o'clock in 74 schools, at 7.30 in 117, and at 9 o'clock in 1,102; only 167 dismiss before 4 o'clock. The report shows no cloakrooms of any sort in 537 schools; 418 have one cloakroom, and 308 two. Where no cloakroom is available, clothing is hung inside the classroom, or piled up on benches in the corners.

No thermometers are found in nearly two-thirds of the buildings reported, and even where they are supplied it is manifestly clear that many teachers either know next to nothing about keeping a school-room at the proper temperature, or else that the conditions of the

buildings are such that the rooms can not be kept at even temperature. For example, many a teacher reports: "I am supplied with a thermometer and I strive to keep the temperature at 75° to 90° in winter." This may not be so bad as it seems. If the thermometer registers 80° a little above the breathing line, the temperature 1 foot above the floor may be as low as 65°. Until the buildings are more carefully constructed, the matter of heating rural schools will necessarily be unsatisfactory. Of 1,268 reports on method of heating, 764 schools use the common stove and 604 locate it in the middle of the room.

There are practically no workrooms in the schools reporting; not one-fourth of the desks are adjustable; and few of the buildings are properly decorated.

In concluding the discussion of this brief survey into typical rural schools, it should be said that it is very important at this time for the various States to render helpful service to their rural-school officers, who are eager for better things; they need specific help. Much of the back-to-the-farm movement will be disappointing, unless the rural schools are remodeled and revived.

The reader who will take time to study carefully the summarized results presented in the accompanying table will be able to get a more complete idea of actual conditions than he can get from the condensed account given above. The names of the States from which these returns were gathered are here given in order to show that the figures represent as nearly as practicable typical conditions the country over. A study of the detailed reports brings out the fact that there is less difference between rural schoolhouses in the States mentioned than might be anticipated.

Returns were studied from 2 counties in each of the following 18 States:

Alabama.	Missouri.	Pennsylvania.
Arkansas.	Montana.	South Dakota.
Colorado.	Nebraska.	Tennessee.
Indiana.	North Carolina.	Texas.
Maryland.	North Dakota.	West Virginia.
Minnesota.	Oklahoma.	Wisconsin.

Size of school grounds:

Less than one-half acre.....	321
One-half acre to 1 acre.....	406
One acre to 2 acres.....	394
Two acres to 3 acres.....	74
Three acres or more.....	50

Area available for gardening:

Less than one-tenth acre.....	156
More than one-tenth acre.....	34
No ground available for gardening or agriculture.....	1,106

Character of ground:

Level.....	1, 030
Rough or hilly.....	253
Drained.....	1, 014
Not well drained.....	234
Trees.....	930
No trees.....	340

Material construction and age of the buildings:

Wood.....	1, 134
Brick.....	110
Stone.....	37
Cement.....	7
New.....	464
Old.....	805

Number of classrooms:

One.....	1, 162
Two.....	60
More than two.....	33

Method of lighting:

From one side.....	25
From two sides.....	880
From three sides.....	346
From four sides.....	35

Amount of glass surface in classrooms:

Less than one-tenth floor area.....	171
Less than one-sixth to one-tenth floor area.....	559
One-sixth floor area or more.....	482

Window shades and methods of using them:

Having window shades.....	1, 145
No shades.....	144
Shades fastened at the bottom of windows.....	234
Shades fastened at the top of window.....	897

Character of floors of the classrooms:

Single thickness.....	611
Double thickness.....	644

Kind of blackboards used and height set above floor:

Painted lumber.....	177
Some form of liquid slate.....	668
Painted canvas.....	98
Other improved material.....	188
Less than 3 feet above the floor.....	692

Character and number of desks used:

Single.....	514
Double.....	774
Nonadjustable.....	848
Adjustable.....	281
Sufficient in number.....	1, 127
Insufficient in number.....	143

Color of classroom walls:

Unpainted lumber.....	122
Passable color.....	691
Unsuitable color.....	457

Number of cloakrooms:	
None.....	537
One.....	418
Two or more.....	308
Ventilation of the classrooms:	
Windows.....	405
Some help from jacketed stove.....	336
Other devices.....	133
Testing the vision of the children:	
Tested.....	294
Not tested.....	968
Testing the hearing of the children:	
Tested.....	238
Not tested.....	1, 002
Source of water supply:	
Well on school grounds.....	567
Spring in the neighborhood.....	134
Neighbor's well.....	557
Less than one-fourth mile from building.....	727
One-fourth mile or more from building.....	226
Pure (teacher's judgment).....	1, 032
Not pure (teacher's judgment).....	182
Methods of serving water to the children:	
Bubbling fountain.....	5
Individual cups.....	673
Common drinking cups.....	580
Methods of heating the classrooms:	
Common stove.....	764
Jacketed stove.....	503
Fireplace.....	1
Stove placed in middle of room.....	604
Stove not placed in middle of room.....	559
Janitor furnished:	
Yes.....	213
No.....	1, 049
Methods of sweeping:	
Dry.....	417
Sprinkled floors.....	548
Damp sawdust or other dust-gathering material.....	227
Floor oiled.....	199
Method of dusting:	
With feather duster.....	145
Cloth (dusting evidently poorly done).....	1, 080
Regulation of temperature:	
Well regulated (teacher's judgment).....	814
No thermometer.....	755
Time of day for opening school:	
8 o'clock.....	74
8.30 o'clock.....	117
9 o'clock.....	1, 102
Time of day for closing school:	
4 o'clock.....	1, 121
Earlier.....	167

Number and condition of toilets:

None.....	50
One.....	52
Two.....	1, 174
Passably sanitary.....	601
Insanitary.....	631

Open-air studying:

Yes.....	406
No.....	845

Medical inspection:

Yes.....	61
No.....	1, 196

Care of the teeth of the children:

Yes.....	68
No.....	1, 148

The following report of the results of the sanitary inspection of 3,572 fourth-class district schools, made in 1911 and 1912 by the Pennsylvania State Department of Education, shows that the condition of rural schools in that State is about on a par with that brought out through similar investigations in other States.

The tabulated statement giving the summaries of the investigation is here reproduced:

Summary of sanitary inspection of 3,572 district schools in Pennsylvania in 1911 and 1912.

Number of schools inspected.....	3, 572
Number of schools insanitary.....	3, 036
Number of schools sanitary.....	536
School building:	
Rooms and halls unclean.....	229
Sawdust and antiseptics not used.....	2, 662
Dry dusting.....	2, 934
Light surface not 20 per cent of floor space.....	1, 083
Light admitted in front of pupils.....	622
Ventilation insufficient.....	1, 647
Stove in room.....	2, 793
Stove not jacketed.....	1, 029
Steam or hot water.....	219
Furnace in cellar.....	602
Room not warm.....	223
Floors not warm.....	279
Hot air.....	2
Water supply:	
No water supply.....	1
Fountain.....	15
Hydrant or spigot in room.....	188
Spigot in building or on ground.....	246
Drilled well.....	794
Dug well.....	1, 021
Spring.....	1, 095
Surface drainage not excluded.....	437
Nuisance within 100 feet.....	384

Water supply—Continued.

Menace on higher level.....	287
Cooler with spigot.....	688
Bucket not covered.....	1, 233
Not scalded daily.....	1, 500
Fresh supply not secured each session.....	251
Individual cups not used.....	2, 337
Cups dipped in bucket.....	1, 781
Creek water.....	1
Cistern.....	24
Ground pollution.....	148
Privies:	
One single.....	169
Approaches not screened.....	1, 748
Dividing fences not tight.....	1, 138
Bad repair.....	397
Not clean.....	1, 190
Objectionable odor.....	1, 320
No vault.....	839
Vault not water-tight.....	785
Vault full.....	500
Vault overflowing.....	208
Lime or ashes not used.....	1, 066
Surface drainage not excluded.....	962
Urinals and flush closets:	
Not properly vented.....	21
Not clean.....	13
Objectionable odor.....	17
Not sufficiently ventilated.....	17

The accompanying tabular statement of the general hygienic condition of 109 rural schools was compiled from the details of a survey made under the direction of the joint committee of the American Medical Association and the National Council of Education. This committee sent a specially trained field agent with a camera into certain counties of the States of Connecticut, Vermont, New York, New Jersey, and Maryland to make a personal investigation of the conditions of the schools. The summary of facts given below was derived from a compilation of the returns. Many other facts were gathered, but it has not been thought necessary to present them in this connection.

It should be said that the States selected and the counties chosen within each State were singled out, not from previous knowledge of conditions, but more or less fortuitously. The committee does not claim that they are typical counties and typical schools, but it believes that they are approximately so. The fact that they are typical could be substantiated only after a similar investigation had been made in practically all of the counties of each of the States named. However, indirect evidence through the results obtained by the investigations previously referred to bears out the supposition that they approximate typical conditions the country over.

Summary of results of the survey of 109 one-teacher rural schools in the States of New York, New Jersey, Connecticut, Vermont, and Maryland. Investigation made in 1913 by direction of the joint committee of the American Medical Association and the National Council of Education.

GROUNDS.

Size of grounds:	Schools.
Less than one-half acre.....	74
One-half acre to 1 acre.....	25
One acre to 2 acres.....	10
Location of buildings:	
On side of hill.....	32
On level ground.....	43
High ground.....	28
Low ground.....	6
Character of soil:	
Loam.....	31
Gravel.....	10
Sand.....	52
Hardpan.....	4
Clay.....	12
Trees on grounds:	
Schools having trees.....	86
Schools without trees.....	23
Character of fence:	
Wire.....	26
Board.....	17
Stone wall.....	9
Picket.....	3
Rail and wire.....	5
Rail.....	3

WATER SUPPLY.

Source of water supply:	
Open springs.....	15
Piped from open spring.....	7
Dug wells.....	68
Driven wells.....	10
Walled reservoirs.....	4
Field stream.....	2
No water supply.....	3
Sources of defilement:	
Too near privies.....	7
Too near farm buildings.....	22
In open cow pasture.....	4
Sources that are exposed to other kinds of defilement.....	36
Receptacles for holding drinking water:	
Common open pail.....	53
Covered tanks with faucet.....	40
Covered tanks with bubbling cups.....	1
No receptacle provided.....	15
How often receptacles are cleaned:	
Four times a month.....	37
Daily.....	10
When teacher thinks necessary.....	8

Lavatory facilities:**Schools.**

Washbasins.....	91
No washbasins.....	18
Provided with soap.....	61
Not provided with soap.....	48
Provided with towels.....	56
Not provided with towels.....	53
Towels washed twice a week.....	3
Towels washed once a week.....	31
Towels washed at infrequent intervals.....	13

Methods of serving water:

Schools using paper cups.....	5
Schools with only one cup.....	20
Schools with one cup per child.....	51
Schools with more than one cup, but fewer cups than children.....	29
Schools without cups.....	4

PRIVIES.

Both boys and girls use same.....	50
Partitioned.....	45
Separate buildings provided for sexes.....	59
Screened.....	51
Distance from school building:	
Less than 10 feet.....	25
Between 10 and 25 feet.....	32
Between 25 and 50 feet.....	36
Over 50 feet.....	16
Provided with locks.....	14
Obscene drawings.....	50
Kinds of toilets and their condition:	
Provided with removable receptacle.....	9
Cesspool protected from flies.....	8
Cesspool unprotected from flies.....	101
Neither receptacle nor excavation.....	92
How often refuse removed:	
Once a year.....	101
Less frequently.....	8
Ventilated:	
No provision made.....	75
Some provision made.....	34
Odor offensive.....	106
Not offensive.....	3
Seats clean.....	60
Not clean.....	49
Disinfected.....	1
Not disinfected.....	108
Number of roofs that leak.....	22

WALLS AND CEILINGS.**Material of walls:**

Matching.....	53
Plastered and papered.....	14
Plastered.....	40
Wood.....	2

Color of walls:	Schools.
Wood.....	23
Gray.....	30
Green.....	10
Tan.....	8
White.....	25
Terra cotta.....	2
Yellow.....	5
Brown.....	6
Color of wainscoting:	
Gray.....	37
Green.....	6
Wood.....	8
Brown.....	14
White.....	10
Material of ceiling:	
Matching.....	65
Plastered and papered.....	7
Plastered.....	33
Metal.....	4
Color of ceiling:	
White.....	36
Gray.....	24
Green.....	5
Tan.....	4
Terra cotta.....	3
Brown.....	3
Yellow.....	5
Wood.....	29

BLACKBOARDS.

Material of blackboards:	
Wood.....	49
Slate.....	42
Composition.....	4
Cement.....	6
Plaster.....	8
Location of blackboards:	
Front only.....	42
Front and rear.....	9
Front and one side.....	13
Front and two sides.....	15
Front, rear, and one side.....	2
Front, rear, and two sides.....	12
One side only.....	1
Two sides.....	7
Rear.....	2
Rear and two sides.....	3
Between windows.....	57
Height of blackboards set above floor:	
4 feet.....	1
3½ feet.....	2
3 feet.....	61
Less than 3 feet.....	22

Width of blackboards:	Schools.
5 feet.....	5
4 feet.....	11
3½ feet.....	3
3 feet.....	70
2 feet.....	9
Schools not given.....	11
Square feet of blackboards:	
30 square feet or less.....	23
30 to 50.....	26
50 to 100.....	40
100 to 150.....	18
Over 150.....	2

SCHOOL BUILDINGS.

Character of building:	
Wood.....	100
Stone.....	4
Brick.....	5
Old.....	103
New.....	6
Good condition.....	80
Needing repairs.....	29
Basements:	
School buildings with basements.....	11
Sanitary basements.....	7
Insanitary basements.....	4
Floors:	
Single floors.....	39
Double floors.....	70
Deadened.....	1
Good condition.....	63
Bad condition.....	46
Oiled.....	38
Roof:	
Leaks about belfry.....	7
Leaks elsewhere.....	22
Schoolrooms:	
Length—	
20 feet or less.....	4
20 to 22 feet.....	20
22 to 24 feet.....	6
24 to 26 feet.....	13
26 to 28 feet.....	10
28 to 30 feet.....	7
30 to 32 feet.....	11
32 to 34 feet.....	14
34 to 36 feet.....	8
36 to 38 feet.....	11
38 to 40 feet.....	4
Width—	
12 to 16 feet.....	6
16 to 18 feet.....	6
18 to 20 feet.....	28

Schoolrooms—Continued.

Width—Continued.

Schools.

20 to 22 feet.....	81
22 to 24 feet.....	11
24 to 26 feet.....	12
26 to 28 feet.....	8
28 to 30 feet.....	2
30 to 32 feet.....	5

Height of ceiling above floor—

7 to 8 feet.....	28
8 to 9 feet.....	39
9 to 10 feet.....	17
10 to 11 feet.....	14
11 to 12 feet.....	2
12 to 13 feet.....	4
15 to 16 feet.....	2
16 to 17 feet.....	3

Windows:

Schools with—

3 windows.....	1
4 windows.....	6
5 windows.....	9
6 windows.....	58
7 windows.....	9
8 windows.....	14
9 windows.....	8
10 windows.....	3
12 windows.....	1

Windows in classroom face—

North and south.....	15
North, south, and east.....	9
North, south, east, and west.....	11
North, east, and west.....	17
North, south, and west.....	13
North and east.....	1
North and west.....	2
East and west.....	1
East and south.....	1
South and west.....	1
South, east, and west.....	22

Total area of glass surface in windows compared to floor surface—

Glass surface equal to—

Less than one-tenth floor surface.....	10
More than one-tenth but less than one-eighth.....	27
More than one-eighth but less than one-sixth.....	20
More than one-sixth but less than one-fourth.....	36
One-fourth or more.....	13

Not given.....	3
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Double sash on weights.....	38
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Can be opened for ventilation—

Upper and lower sash.....	52
Lower sash.....	105
Can not be opened.....	2

Windows—Continued.

When cleaned—	Schools.
Once a year.....	98
Oftener.....	6
Never cleaned.....	5
Windows with shades.....	100
Windows without shades.....	9
Shades in good condition.....	63
Shades in bad condition.....	37

Cloakrooms:

Schools having one cloakroom.....	64
Schools having two cloakrooms.....	25
Schools having no cloakrooms.....	20

Janitor service:

Special janitor service.....	38
Teacher serves as janitor.....	71

Desks:

Double desks.....	73
Single desks.....	36
Sufficient in number.....	105
Nonadjustable.....	109
In good condition.....	94
In bad condition.....	15
Desks face windows.....	16

Heating:

Jacketed stove.....	15
Unjacketed stove.....	88
Furnace.....	6
Stove in middle of room.....	72
Stove in corner of room.....	18
Sufficient heat in cold weather.....	94
Insufficient heat.....	9
Stove troublesome.....	26

Ventilation:

At recess only.....	62
Oftener.....	41
By the use of windows.....	48
By the use of doors.....	5
Both doors and windows.....	56
Upper sash of windows.....	14
Lower sash of windows.....	34
Both lower and upper sash.....	50

Sweeping and dusting:

Once a week or less.....	20
Once a week and oftener.....	39
Daily.....	50
Dry sweeping.....	70
Sprinkle or use compound.....	39
Use feather duster.....	13
Use dust cloth.....	86
Use brushbroom.....	3

Medical inspection:

Vision and hearing tested by teacher.....	52
By regular medical inspector.....	38

Chapter IV.

THE LOCATION OF COUNTRY SCHOOLHOUSES.

More friction has arisen between county superintendents and school patrons and among the patrons themselves with regard to the location of rural school buildings than over any other question directly or indirectly having to do with country schools. When school district boundary lines have been established, the people naturally conclude that the building should be located in the exact center of the district, or as near the center as roads will permit. Rarely has the thought of the location from the needs of health, playgrounds, or a school farm been the chief consideration.

There is reasonableness in the demand for a central location, but only when more important demands are not in conflict with it. It is far more important, for example, to have well-drained school grounds, where the opportunity for securing a sanitary water supply and toilet system is good, than it is to give the preference to a location nearer the center of a district where these sanitary necessities are not readily supplied. The slight inconvenience to a few children resulting from locating the building to one or the other side of the geographical center should not be considered seriously when the more important considerations of health, sanitation, playgrounds, and the larger community interests are at stake. Of course, in very cold climates children will have to be protected in bad weather, but parents are generally ready and willing to do this of their own accord. In good weather a walk to school of a mile and a half furnishes excellent exercise, teaches the children to be self-helpful and courageous, gives them strength to resist the effects of ordinary exposure to wind and rain, and is usually of greater value in general physical training than all the unnatural calisthenic exercises the teacher can devise.

In selecting a site for a rural schoolhouse, the following factors should be considered:

1. No site should be selected that will not offer a good outlet for tile drains set well below the walls of the building to keep the basement and garden in good condition. A wet, swampy piece of land is not only a muddy, dirty place, but it introduces dangers from ground air and moisture that will always prove troublesome and unwholesome. The air, on account of its great weight, presses into the ground to a much greater depth than is ordinarily supposed. When

the air above the ground becomes colder than that in the ground, and this is true at night during warm weather and even during the day in cold weather, the heavy air above the ground will displace that in the ground, and will drive it out at the point of least resistance. Since the ground underneath and about a schoolhouse is drier than that not covered, the ground air is driven from all directions toward the schoolhouse, and by reason of the fact that the heat escaping from the building will cause an upward draft, this ground air is easily drawn into the rooms. Ground air contains a far greater percentage of carbon dioxide and other noxious gases than is ordinarily found in air above the ground. These gases are produced through the agency of the bacteria acting upon decaying animal and vegetable matter in the soil. Moreover, ground air is generally saturated with moisture, and as it rises in the schoolroom, especially at night when the building is cold, this moisture will be deposited on the walls, blackboards, and floors, so that all wooden parts of the building are rendered liable to decay and the air in the building will be stuffy and cellarlike. Unless school buildings are so built as to prevent the entrance of this ground air and the moisture brought up with it, no amount of effort on the part of the teacher will be able to keep the air always wholesome and hygienic. It is of great importance, therefore, to prevent these difficulties by selecting a site which can be kept wholesome by proper drainage.

To go to the other extreme and select a high hill or a wind-swept place for the location of the school building is also an error. What is needed is a location comparatively level, but so situated that it can be easily kept dry.

2. Other things equal, it is generally better to select a site with a frontage to the north or the south, so that the building may be planned with the short side facing toward the roadway and the long sides toward the east and the west. Such a site makes it easier on the whole to plan the building with reference to its general appearance and also with reference to its cost. In order to make this point clearer, let the reader undertake to draw a floor plan for a lot with an approach to the building from the east or the west. Either he will have to depend for his classroom on north or south light, which is to be avoided, or to face the building with the long side toward the roadway. This will introduce some architectural difficulties, for it is often much easier to get a satisfying elevation for a one-room school building with the entrance in the end rather than in the side of the building; and it is also more economical of space. Many school buildings have been doomed to bad illumination from the fact that builders have followed the custom of facing the end of the building toward the roadway, regardless of the direction from which the classroom must get its light.

However, it is not impossible to adjust a satisfactory building to a lot facing a roadway on the east or west. Several of the plans presented in this bulletin have been drawn to meet just this situation, for sometimes school authorities are limited to the selection of a site east or west of a roadway. But where there is a choice and all other considerations are even, it is better to utilize a lot with a frontage on the north or the south.

3. Another set of conditions must be taken into account, and these have to do indirectly with the lighting. Suppose a lot is selected with a north or a south frontage, and that to the east or the west of it there are high hills or mountains sufficiently near to raise the horizon line appreciably. Such a location would at once handicap the building by making it next to impossible to secure the proper amount of light from one side or the other. If high forests or mountains are near on the east, then the west light should be preferred for the class room. If this hindrance to light is on the west of the lot selected, then the east exposure would be the only one to use. Many rural school buildings located in valleys are much more seriously handicapped from the point of view of illumination than the average schoolman is conscious of.

4. Elsewhere emphasis has been laid on the fact that our school grounds are not large enough, especially from the point of view of agricultural work. The country schools will never be able to do their work properly unless the amount of ground assigned to them is increased. Playgrounds, agricultural work, fruit growing, and forestry—all legitimate demands upon the rural school—require more land than is usually given to rural schools. But it would be possible to select a plat of ground sufficiently large and yet ill-adapted for playgrounds or for agricultural work. Hence the site selected should be on good soil, adapted for the cultivation of any or all kinds of plants or grain ordinarily grown in the neighborhood. To select a poor, sterile, rocky soil, though well situated with reference to other requirements, would be a mistake, for no teacher could, on such ground, make such a showing in agricultural experiments as would attract the favorable attention of the farmers in the community. Hilly, rough, or rocky land is not satisfactory either for playgrounds or for any other purpose to which the country school plat should be devoted.

In one case in New York State observed by the field agent of the joint committee in the summer of 1913 the schoolhouse was on a hillside and the accumulated wash down the hill had risen above the foundation to such an extent that the drainage actually "seeped through to the floor."

5. An abundant and sanitary water supply is a matter for thoughtful consideration in the selection of the site for a rural schoolhouse.

A country school building is frequently located because of the proximity of a spring or a neighbor's well. The average spring in the country has proved to be a greater menace to health than people have ever dreamed of, because with increasing population and deforestation there is more opportunity both for contamination of springs and greater irregularity of water supply than was formerly the case. Spring water may appear very clear and yet be unwholesome to drink, and it is therefore risky to depend on springs for drinking water. If a site is selected with the idea of depending on a well for drinking water, it is important to take note of any possible chances for seepage into the well. If a high, rocky place is selected, it would be very difficult and expensive to sink a well to such a depth as to insure a sufficient amount of pure water. Generally speaking, a gravelly or sandy loam into which a well can be driven to a sufficient depth to prevent any surface contamination is preferable.

6. Finally, no site should be selected for a school building too close to electric lines and steam railways. Such a location offers opportunity for the introduction of a great deal of smoke and dust into the schoolroom. Further, there is always some danger due to fires or electricity when a building is situated near such lines. There is also great temptation for children to walk or play on car lines, and this naturally introduces useless danger. The chief difficulty, however, is the noise. Some States have laws forbidding the erection of school buildings within 500 feet of railway lines, and this sort of legislation is bound to increase.

Chapter V.

ORIENTATION OF THE BUILDING.

No school building can be well lighted if it is not first properly placed with reference to the cardinal points of the compass. If a building is so placed on a lot as to make it necessary to locate the windows in the classrooms to face toward the north or the south, neither the required amount of glass surface nor the correct setting of the windows will overcome the difficulties thus introduced. In order to make this last statement clear and significant, these difficulties must be stated and explained.

The fundamental demands of health require the purification of a classroom by direct sunlight; but it is also necessary to introduce this all-important purifying agent in such a manner as to prevent as far as possible the direct rays of the sun from falling on the desks and books of the pupils while they are engaged in study. If the windows of a classroom are placed on the north side of a building located in any section of our country, very little direct sunshine will ever enter, and during the school season practically none, for the sun's path is then too far to the south. It may be possible in the southern and southwestern sections to get sufficient well-dispersed light in a classroom with windows facing toward the north, but the light thus entering has lost its power as a germicidal agency. Direct sunlight is the most powerful and reliable disinfectant known, and it is running contrary to one of the best-established principles of hygiene to construct either a school building or a dwelling house in such a manner as to fail to get this value of direct sunlight.

True, in large buildings devoted to high-school or technical education some special rooms are needed for art work, and for these the north light has an advantage because of its quality. North light is soft and produces more artistic shadow effects than light from any other direction. But these rooms are not as wholesome as those receiving direct sunlight, and are allowable only for short periods during the day. For ordinary classrooms, where children remain at work during the whole day, dependence on north light is a serious error.

Elsewhere detailed reasons are given why classrooms should receive light from but one side; it is sufficient here to state the fact that unilateral lighting is universally recommended in all locations

where light is not impeded by tall buildings, a dirty, smoky atmosphere, or any other serious hindrances. In cold climates it is not best to depend on windows facing toward the north, because it is more difficult, and consequently more expensive, to heat these rooms. They are not only exposed to the direct winds from the north, but they fail to get whatever available heat the direct rays of the sun carry. By reason of these two handicaps a schoolroom so situated may require in cold weather 10 to 20 per cent more fuel than one getting east or west light. Of course the effect of the wind will depend to a great extent on the construction and location of the building. A building with walls made of porous brick or wood will show greater leakage than one whose walls are of cement or of hard brick. But while these difficulties suggest greater expense, they are not of so much importance from the health point of view as the dangers due to lack of sunshine. For the sake of health every schoolroom—and, for that matter, every living room—should receive a “sun bath” every day the sun shines.

Doubtless some who realize the great hygienic importance of sunlight have concluded that classrooms facing toward the south are the most acceptable. This conclusion would be warranted were it not for the fact already mentioned. With direct sunlight streaming into a schoolroom during the entire school day, it is well nigh impossible to furnish proper light to all the pupils in the room. This difficulty is not serious in a dwelling, where chairs are not fastened to the floor and where people can adjust themselves so as to get proper light either for reading or for work, but in a schoolroom, where from 25 to 45 children must spend a good part of each day, it is impossible, whether the desks are fastened to the floor or not, for all of the children to adjust themselves to avoid the shifting rays of direct sunlight entering the room. If, as is usually the case and probably will be for a considerable time to come, the desks are fastened to the floor, the pupils can do little to adjust their positions so as to avoid the painful and harmful effect of direct sunlight on desk or book.

If shades are used, they will inevitably reduce the light in parts of the room below the normal demand, and hence some of the children will suffer for lack of light. Many kinds and qualities of window shades have been devised to meet these conditions, but none of them has fully overcome the difficulty suggested. Space is lacking to discuss window shades at length. Suffice it to say here no shade has been developed that will properly condition the direct rays of the sun to a schoolroom so as to guard the children from eyestrain due to reflection of direct sunlight and at the same time permit the passage of sufficient light to give satisfactory illumination for all parts of the room.

The conclusion, therefore, is this: Be sure that no lot for a building is selected which will require such an orientation of the building that it will be necessary to depend on south light for the classrooms; buildings for school purposes, especially for elementary classes, should be so planned and so located on a school lot that the classrooms may receive either east or west light.

In the construction of a small building there are some advantages of the east light over the west. First, an eastern exposure will permit the morning sun to take the chill out of the room before school begins. Second, it is probably true that there are in most parts of the country fewer cloudy mornings than afternoons, and hence those rooms having windows toward the east will get a better sunning than those with windows toward the west. In those sections where foggy mornings are prevalent, the opposite would be true. In buildings with east exposure the troublesome direct rays of the sun will have nearly disappeared by 10 o'clock in the morning. The shades can then be rolled up for the rest of the day. In the third place, the prevailing cold winds in the winter are more from the west and northwest than from the east, except along the eastern coast.

However, the correct choice between east and west windows will depend to a large degree on the surroundings. For example, if a school building must be placed near hills, mountains, or tall forest trees, it would be better to choose the west side for the windows, if the horizon line is high toward the east. If the opposite be true, the east side is preferable. A range of high hills or mountains often raises the horizon line so high that the sun may not appear above it until quite late in the day. Besides, even after the sun has reached the zenith, a mountain's side will not reflect back enough light to insure good illumination. A wide expanse of sky is necessary. It will be important then to study the surroundings, to note the possible hindrances and the general outlook in order to decide wisely whether the building should be placed to introduce east light or west light into the classrooms.

Plate 17 represents a schoolhouse in the mountains of Colorado. The location of this building makes it very essential that the light entering the classroom should come from the side opposite the mountain near which the school is built.

Even when the difficulties with reference to lighting are for all practical purposes equal, other considerations may affect a decision. An attractive outlook from a classroom is better than an ugly one, and it sometimes happens that this consideration decides the orientation when other things are equal. For example, if a lot must be selected near a busy, dusty roadway, much relief from the dust, noise, and disturbance may be secured by facing the windows in the opposite direction. On the other hand, the appearance of a building may

demand the placing of the windows on the side from which the approach is made. All matters of this sort must be determined by local conditions. But it will always remain true that in the latitude of this country it is better and safer to depend on east or west light for schoolrooms than on north or south light.

There is still another point worth mentioning and this favors west windows. Children seated in rooms lighted from the west will naturally face north, and are then in a position to read their maps without confusion. The cardinal points on the map will then agree with the realities about them. The top of the map will be toward the real north, the left side will correspond with the real west, and altogether the representation and the reality will be more easily connected.

Thus far this discussion relative to orientation has been concerned with the proper lighting and sanitation of the classroom. The question of lighting workrooms, libraries, cloakrooms, and toilets, demands separate treatment, for in these rooms direct sunlight is not a disturbing element, and in the main the purifying influence of sunlight is more important. Unilateral lighting is not an essential condition in these rooms.

Workrooms in general are decidedly better for receiving abundant sunshine, for here benches and tables should be arranged to suit the convenience of the students, and more individual liberty is necessary. The same is true of library rooms. Toilets and cloakrooms require direct sunshine and abundance of light in order to keep them sanitary and wholesome. Proper orientation when applied to these rooms means provision for abundant light and as much direct sunshine as good sanitation demands.

Chapter VI.

THE COUNTRY SCHOOLHOUSE.

GENERAL CONSIDERATIONS.

The country schoolhouse should be beautiful. This does not mean that it needs to be expensive. Frequently those who have much money to spend on a school building do it so thoughtlessly as to destroy all possibility of beauty. Towers and turrets have no place on a country schoolhouse. A log schoolhouse can be made beautiful. There is power in beauty closely allied to righteousness. The dissatisfaction with country life which has caused so many young people to go to the cities is partly due to the bleakness and ugliness of the farm home, the farm barn, the rural schools, and churches. If a beautiful rural schoolhouse could be constructed in every neighborhood, it would not be long before the people would see and feel its power.

How shall we get beautiful schoolhouses? There is only one way. Those who have developed that sense of fitness which we call appreciation of beauty must have power and means furnished them to create it in our public buildings. Cities where a few artist-architects are at work can do much, for they can afford to hire such architects to plan their buildings and to supervise their construction. In the country where a meager allowance is made for the construction of a schoolhouse, those in authority do not feel justified in hiring a worthy architect to make their plans. Even if they did, it is not likely that they would get the building the artist had planned; for the ordinary carpenter who builds most of our rural schoolhouses is not able to read drawings and to follow exactly the specifications the architect would draw up. Practically all of the rural schoolhouses constructed in the last quarter of a century have been copied after others in adjoining neighborhoods, and hence little progress has been made. Year after year new houses have been built perpetuating the evils of unhygienic construction and the horrors of architectural ugliness in almost every detail. By the use of the plans detailed and illustrated in another chapter, it is hoped that a little may be done to further the construction of more beautiful rural schoolhouses, and at the same time to save money and get more satisfactory buildings. (See chap. 7.)

This emphasis on the beauty of school architecture is not for the purpose of declaring it to be the prime essential. Yet none of us should forget that beauty is in its own nature useful. Unfortunately those who have built our country schoolhouses have for the most part given little or no thought to real beauty. Some have attempted to adorn, but these adornments frequently only accentuate the lack of unity and harmony. Hundreds of rural school buildings show that if the roof and the sides, the height and the width, had been befittingly proportioned the one to the other, much money would have been saved, and far more beautiful buildings would have been obtained. Ugliness in rural school buildings has, therefore, not only cost money, but has corrupted the youth by rudely staring them in the face daily. Simple beauty is not expensive; it is by its very nature economical of material. Look at the illustration of the little log schoolhouse (plate 18A) located in a far Western State. Cover up the monstrous lean-to, and you will see how beautiful a simple building can be. Contrast this little, inexpensive building with the new and elaborate building shown in plate 18B. See how many things have been stuck together in the latter, and how much might have been saved if some one in authority had seen the real through the ideal.

Beauty is more than economical; it is educational in the highest sense. Beauty is not for the rich; neither is it for the poor. It is for all. A beautiful country school building, appropriately located, will exert a quiet but persistent educational influence on all who are associated with it, in school or out. Its unconscious reflex influence will enter into the life of the neighborhood and of necessity express itself in many ways. All who see a beautiful and appropriate school building are inclined to be more loyal to the cause it represents and less satisfied with ugliness anywhere. The district schoolhouse is the only building in the community that belongs to all, and in a definite way it reflects the civic standards of all. It is, therefore, important to express through it the highest attainable ideals of beauty and fitness, so that it may serve all acceptably.

WORKROOMS NEEDED.

The rural schoolhouse should be designed to accommodate and encourage many legitimate phases of school work now generally neglected in the country. All district schoolhouses, those for one-teacher schools as well as those of the consolidated type, should have, at least, one workroom—two would be better—where manual training, domestic science, and related subjects could be taught according to laboratory methods. In a district where the number of school children does not exceed 30, one good-sized, well-lighted workroom

can be made to accommodate both boys and girls by alternating their work. Here the boys can be taught to make useful articles of furniture for their homes or for the school, and to apply their arithmetic and drawing to real problems. Such work can not be done in the regular classroom. When a separate room is provided, much of the manual work can be done while the teacher is hearing other classes recite. The separate workroom will furnish an excellent opportunity to place a definite responsibility on pupils who work for a part of their time out of sight of the teacher, but near enough to call for direction whenever it is needed. Manual and domestic work is individual work and each pupil can be held to strict account for the faithful use of his or her time.

An attempt to do manual training in a one-room rural school is shown in plate 2A, but certainly this is an unsatisfactory makeshift for a workroom. Under the conditions here shown the boys would either have to work out of school hours or else the rest of the school would have to take a vacation while they hammer and saw. Much cardboard work could be done without serious distraction; but very few vigorous boys take as kindly to cardboard carpentering as to making some real thing of wood. This interesting picture serves to emphasize in a more vigorous way than one could in words the need of a workroom for boys in a rural school.

The boys can use the workroom as an agricultural laboratory as well as for shop work. The preparation of boxes for testing the germinating power of seeds, the study of soils and fertilizers, experiments on the growth of plants, and a large number of similar experiments call for a special room. This room could be used by the older boys two afternoons or two stated periods a week, by the older girls for a similar time, and possibly by boys and girls together for one period when things of common interest, like domestic hygiene and sanitation, house planning, studies in food values, drawing, could be worked out to the advantage of all the older pupils. The workroom is needed by the girls for cutting, sewing, cooking, canning, and millinery, for laundry work, and for all other subjects directly connected with women's work in the home. A well-prepared teacher can make the workroom of a district school a very significant connecting link between the school life and the home.

The ordinary district schoolhouse consists in general of a classroom only, and there will be a good deal of prejudice to overcome by those who would introduce workrooms. The hoary and customary objection—"The schoolhouse I used as a boy had no workroom. I got along all right, and my children are no better than I"—will have to be met. This objection can be answered in some such fashion as this:

Yes, you have done well; but why do you not use the same sort of a plow your father used? You find it to your advantage to use many kinds of tools he did not have. Would you be willing to deny yourself and your neighbors a modern harvester because your father used a scythe and cradle? Would you be willing for your wife to do her cooking in an old-fashioned fireplace instead of on a modern stove? Would you have her do all your sewing by hand, as her mother did? Yes; they were as good as you and your wife; but conditions have changed, and you would not be as good as they if you did not take advantage of labor-saving devices, just as they did. They did the best they could, and would be ashamed of you, were they alive, if you did not do the same thing.

Such argument may not convince all, for prejudice is not always amenable to reason. But it will rationalize the demands for workrooms and will in the end serve a purpose.

This demand will find more favor, however, if such objectors can be shown that it will often cost very little more to introduce workrooms than to do as we have been doing; that is, building schoolhouses with classrooms larger than needed. There are not so many children in many of the districts as there were 15 or 20 years ago. It is an unusual one-teacher country school that has an average daily attendance of 35 children. But suppose it does cost a little more to provide workrooms, that is no excuse for not doing it. A reaper costs more than a scythe and cradle, but it is worth more.

No apology will be offered for introducing workrooms into most of the plans which follow later in this bulletin. They are needed, and the children and the community should have them. They should be fitted with tables, cases, drawers, and benches, where tools and work could be kept safely during the progress of the work and when school is not in session. If possible, a small cooking stove should be installed and utilized for cooking an occasional warm luncheon for the children as a part of the work in domestic science, and on which, during social affairs at the schoolhouse, a pot of warm chocolate or a cup of tea could be prepared. This stove will not rust out during the summer, provided the schoolhouse is used as it should be, and as it will be if a proper incentive is furnished. With proper care, and that should be a part of the teaching, it would not rust through a summer even if not used at all. Special training in the care of tools would teach boys to take better care of tools and implements at home, as well as of public property, and this training is sorely needed by the average farmer.

It is not proposed to keep children after school hours to do manual labor of any kind; the training should be a legitimate part of the daily program. Objection to such work will, of course, be urged by some teachers and patrons on the ground that the program is already overcrowded, and that if time for manual work is taken the course of study as outlined can not be completed and the examinations passed for promotion. Such objections have weight, and

some country teachers are so hedged about with rules, regulations, and rigid programs that they could at first do little along the lines of industrial work. It is difficult to cover all the work ordinarily mapped out, and demands for more time are constant from every one who is exploiting some specialty for the supposed betterment of the school. Each devotee to mathematics, nature study, geography, classic myths, English composition, grammar, local history, spelling, or what not is pleading, and sometimes scolding, for the greater recognition of her specialty, and by reason of this persuasion the curriculum is overcrowded, and too much fact-instruction is demanded.

No specialty is exploited when it is urged that every girl in a district school should learn something about home-making and home life in general. Girls will have to learn it some day, whether they learn it in school or not; in fact, most of it can not be learned in school, but only through actual experience; yet it is possible to interest deeply all girls, and boys, too, for that matter, in home sanitation, house planning, care of children, food values, sewing, cooking, and other things of fundamental importance to the home. These are not specialties; they are the common demands of life; and even if a girl is so fortunate as to be able to keep servants, she must know how to do such things in order to direct servants properly and economically. The demand for workrooms in the district schools in which boys and girls can be taught some of the things of practical life is part of the current demand for a more rational education for the children. By no means should the ordinary school work be neglected; but it ought to be shorn of its useless features and adapted to meet actual needs.

CLASSROOMS.

The size of the classroom in a district school should vary to suit the number of pupils of school age in the district, and more especially the probable number attending school. A room 30 feet long and 21 feet wide will accommodate 35 pupils, will allow for 5 rows of desks—7 desks in each row—and will give ample aisles between the seats and about them. A room 32 feet long and 24 feet wide will accommodate 40 to 45 pupils by placing 5 rows of desks and 8 to 9 desks in each row. In a room 30 feet long and 21 feet wide, such as shown in figure 16, 35 desks could be placed. The width of the aisle next the windows would be approximately 2 feet; the aisles between the rows of desks 18 inches wide; the space behind the last desk in each row 3 feet; and the space between the inner wall and the first row of desks approximately 3 feet. The space between the first seat in each row and the front end of the room would be about 8 feet. This location

of the desks insures good lighting and will give sufficient space about and between the desks to manage the classes without confusion. If we could enlarge this room 1 foot in width, retaining the same number of desks, the advantage would be considerable; for then instead of 3 feet between the inner wall and the first row of desks there would be 4 feet. This suggestion is made to emphasize the need of plenty of space next the blackboard most used by the children. The size of this room should be considered in relation to the fact that it will not be cumbered by bookcases or supplies of any sort; for it has been planned for a building which is to include workroom, library, and cloakrooms.

By reference to statistics concerning the number of children attending the average district school it will be seen that such a classroom would be amply large for the great majority of one-teacher rural schools. If, however, the indications in any district are that provision should be made for 40 to 45 desks, the other dimension of 32 by 24 feet should be used.

Country schools are in session usually during the winter season, and therefore are not as likely to be troubled by the presence of flies, mosquitoes, and similar pests as they would be if in session in summer; nevertheless in many parts of the country during the fall months flies are particularly plentiful and dangerous. Whenever trouble from these plagues is liable to occur, wire screens should be provided for doors and windows, and every effort be made to prevent their presence in the schoolroom. This precaution will not only protect the children while in the schoolroom, but will impress upon them the great importance for such provision at their homes.

The height of a classroom of this size need not exceed 12 or 12½ feet from finished floor to finished ceiling. If the building is located on a lot which will permit the lighting of the classroom from either east or west and there are no obstructions from tall buildings, high hills, or forest trees, 12 feet will be sufficient. This height will save a good deal of expense in the construction and maintenance of the building as compared with a building a foot higher. The placing of the windows will be considered carefully in another section.

In planning this classroom and the other rooms in connection with it, the use of the basement as a furnace and fuel room should be borne in mind. If a classroom of this size must also accommodate a stove, it would be necessary to reduce the number of desks somewhat in order to give the proper space for the jacketed stove in the corner next the fuel room.

Some objection may be raised to the size of this room because it is smaller than many one-teacher rural classrooms, but its freedom from any incumbrances whatever answers these objections.

FLOORS OF SCHOOL BUILDINGS.

No more serious mistake can be made in the construction of a rural school building, unless it be in a failure to provide plenty of light, than in bad construction of floors. The floors of every country school should be made double, with some deadening material between them. This is necessary primarily to prevent the floors from being cold and to exclude the possibility of the entrance of ground air. The under or rough floor may be made of any well-seasoned, rough lumber, and should be laid diagonally across the floor joists and joined together carefully. When this floor is finished, it should be covered { with some form of asbestos quilt, deadening felt, or, if expense must be reduced to its minimum, good quality of building paper. Upon this, at right angles with the joists, should be laid the boards of the main floor.

Floor material of good quality is becoming more and more expensive, and as a result dealers are economizing by using lumber unfit for schoolroom floors. The best material to use is a good quality of white oak, well seasoned, in boards not more than 3 or 3½ inches wide, tongued and grooved, and blind nailed or screwed. Nailing is much less expensive, and, if properly done, answers just as well. Floors, however, are often damaged by careless workmen in their efforts to draw the boards closely together; instead of using a nail set or carefully fitting the boards so that they will join together easily, they drive the nails in with a hatchet or hammer and frequently batter the edge of the board so that when the floor is completed it will show these marks and leave openings for the entrance of dirt. Those who have under their charge the construction of schoolhouses will save a great deal of future difficulty if they will hire someone to oversee the work of laying the floors. Such an overseer could select the boards, see that they were properly prepared, and prevent them from being marred in the nailing.

If it is impossible, on account of expense, to use oak, a good quality of hard pine, with boards not more than 3 inches wide, properly tongued and grooved and set carefully, will make an excellent floor. Here again the supervisor should be on guard to prevent the use of any boards with pitch gashes or knots; otherwise the probability is that such boards will be used, and they will always make the room appear untidy and gather much dirt and dust.

Maple flooring may be used, and, if properly laid and carefully kept, will prove satisfactory; but maple boards are soft, stain easily, show the dents of nails in shoes, and in general are more easily marred than either hard pine or oak. Maple, however, does not splinter so easily as pine and will generally wear longer.

After the floor has been laid it should be planed or sandpapered to an even surface. Before it is used it should be treated with hot linseed oil, and then, after it is thoroughly dried, it should be waxed. The oil will fill the pores of the flooring and prevent it from shrinking, and the wax will give it a finish so that it will not mar easily nor hold the dust.

This is a more careful preparation of the floor than is usually made in constructing a district schoolhouse. The main things, however, to be insisted on are double floors, a good quality of material for the upper floor, and careful laying. The care of the floors will be discussed in another section dealing with the general hygiene of the schoolroom.

WALLS OF THE CLASSROOM.

As lumber has rapidly increased in cost during the last few years, and as the use of plastering made of cement or pulp has become much more common, comparatively few country schoolhouses are now built which have an all-wooden finish on the inside. In certain sections of the South, where lumber is less expensive, and in parts of the Far West, where buildings are remote from railways, classrooms are still ceiled entirely with wooden boards; but throughout the country as a whole most rural school buildings use some form of plastering for the walls. When it seems necessary, on account of convenience or expense, to use lumber, the boards should be well seasoned, not more than 3 or 4 inches in width, carefully tongued and grooved, and joined evenly. The chief difficulty in the use of lumber for the ceiling is that it is often left unpainted, absorbs much light, and makes the schoolroom too dark. Those walls on which no blackboards are placed should be painted above the 4-foot line a very light buff or grayish color, so that there will be no glare and yet the absorption of much light will be prevented. A clear white is objectionable, because it is liable to reflect high lights and to overstimulate the eyes of the children. The red end of the spectrum should never be used, because those colors absorb too much light, are objectionable in appearance, and produce disagreeable mental effects. Naturally, the walls above the blackboard should be painted the same color as the other walls. All walls carrying no blackboard should be stained or painted below the 4-foot line a neutral light brown or a dark gray. The walls below the blackboard should be treated in the same way. The ceiling overhead should be painted a light gray.

When plastering is used the surface should be made firm and hard, so that an occasional cleaning with a damp cloth will not harm it. Clear white plastered walls should be tinted a light, grayish

buff or, when light is plentiful, a slight greenish tint may be substituted. Green, however, is a rather risky color to use because of the danger of introducing too much of it. The use of a light, grayish buff is in general to be recommended.

If wainscoting is used below the windows and the blackboards, the boards composing it should be stained a light brown or a medium gray. This will prevent any strong and useless reflection into the eyes of the children when at work at their desks.

The ceiling should be tinted a lighter color than the walls in order to prevent too much absorption of the light.

BLACKBOARDS FOR CLASSROOMS.

Ordinarily, the best blackboard material that can be used for rural schools without a good deal of expense is a prepared slate cement, which can be mixed and spread on as ordinary plaster. This costs more than the various forms of veneer or the preparations of pulp or cardboard now on the market, but if it is put on in the proper way it is much more permanent and will not buckle or draw away from the wall as the other material mentioned is inclined to do. If it is possible to use slate for the blackboards, it should be used by all means, for, when carefully set, it will prove more satisfactory than any sort of manufactured blackboards. Glass blackboards are still better, but they are so expensive that it is not likely that they will be used for the ordinary district school. Glass blackboards are prepared as follows: A plate of heavy glass is ground on one side lightly, but thoroughly and evenly, and is slightly roughened on the other side; then this roughened side is painted the exact color that the board is to have. By setting this painted side against the wall the color is reflected through the glass to the other side and seems to be an integral part of the structure of the glass. The ground side is the side upon which the writing will be done. The grinding roughens the glass, which causes the chalk to leave a clear, distinct mark on it.

Many experiments have been made in order to determine the proper color of the blackboard. In general the most satisfactory color is a dull black. A very slight tint of green renders the blackboard a little more satisfactory and a little less conspicuous, but it is so easy to use too much green that one hesitates to recommend it. A decidedly green blackboard is very trying on the eyes and disturbing to the sensibilities. Many people suffer when in the presence of much greenish color, and for this reason it is generally safer, unless the work can be intrusted to some one who appreciates all these difficulties, to use a dull, dead black. The liquid slating, so called, often put directly upon the plastered walls, may prove fairly satis-

factory for a time, but the plastering will soon begin to chip and discolor, and after some usage the board will look spotty and the crayon marks will not give a clear, distinct impression. Money can be saved, therefore, by the use of a specially prepared cement blackboard or of some good quality of the other preparations now on the market.

HEIGHT OF BLACKBOARDS.

A district school must accommodate the children of all of the elementary grades, and hence the blackboards must be placed within the reach of all the children. The mistake of placing blackboards so high that the little folk can not use them is a very common error, which those who are constructing a rural school should seek to avoid. If the blackboard on the wall opposite the windows is set 28 inches above the floor, the little folk will be able to use the lower part of this board to advantage. If the board is $3\frac{1}{2}$ feet wide the larger pupils will have no difficulty in finding space at the proper height for their work. One can not do good work on a blackboard in a stooping posture, and the work can not be seen so readily if it is too high. The blackboard on the end wall near the teacher's desk will prove more satisfactory if set 3 feet above the floor and made 4 feet wide, for this space will be utilized largely by the teacher for illustrative work and for such assignments as she may wish to indicate on the board. The rear end of the room may also be utilized for blackboards when the "breeze windows" are set as indicated in the floor plans suggested. The placing of this board may correspond with that at the other end of the room—that is, it should be set 3 feet above the floor and should be about 4 feet wide. The irregular line of the blackboards about the room will not be disagreeable, despite the opinion of some architects.

No blackboards should be placed on the window side of the room. There should be no wall space of any consequence left on the window side on which blackboards could be placed; there will be no space between the windows and only a short space in front of the windows, and this space ought not to be used for blackboards. It will not receive sufficient light, and it will be so badly placed with reference to the children seated at their desks that they will not be able to read easily anything written on it. The two ends of the room and the side opposite the windows will give space enough for blackboards.

The chalk troughs underneath the blackboard should be wide enough to hold the erasers as well as the chalk, and should be deep enough to catch and hold the chalk dust dropping from the brush and the board surface. If a narrow strip of $\frac{1}{8}$ -inch wire mesh is laid in this trough and is hinged so that it may be lifted when the trough is to be cleaned, it will keep the erasers from dipping into the chalk dust

and carrying it to the hands and to the board, and thence scattering it over the room. This device will cost very little and will prove very helpful and acceptable.

DOORS OF SCHOOLROOMS.

Comparatively little may be said concerning the doors of schoolrooms, for those generally used are of the stock pattern, and no others are ordinarily available. It is to be hoped that we shall get away from the ordinary panel doors in time, especially for school buildings, and come to use the plain door without panels. These are now manufactured in a few places and have proved acceptable. No panels mean no ledges to gather dust and dirt; and plain doors are easily kept clean.

The outer door of the schoolhouse should swing outward, both as a protection against danger from fire and against the driving rains. The positions of the doors of the schoolrooms, workrooms, and libraries shown in the various floor plans are worth the attention of those who are planning school buildings.

TRANSOMS.

Transoms in schoolrooms, and for that matter in dwelling rooms, are largely a delusion and a snare. They are usually the dirtiest places in the room, are rarely used, and have been continued from time immemorial out of mere habit. Generally they are so far out of reach and so hard to open that they can not be used. As a result they merely add to the expense of building, gather dust, and render the room untidy. It costs a great deal more to set transoms properly than one would imagine. The "breeze windows" and the doors and windows in the adjoining rooms may be utilized for breezes in hot weather much more safely and easily than transoms. Those who are planning rural schoolhouses would do well to abandon transoms.

PICTURE MOLDINGS IN SCHOOLROOMS.

One is loath to advise the leaving out of picture moldings in schoolrooms and dwelling houses; they are very convenient and useful; and without them walls are usually marred and rendered unsightly by the use of nails and other fastenings for hanging pictures; but these moldings gather so much dust and dirt that a schoolroom on the whole is better off without them. Some inconspicuous nails or screw hooks may be fastened to the woodwork of the walls without marring them and without catching the dust. Incidentally it should be noted that it is not infrequent to find too many pictures in schoolrooms. Few things are more tiresome than a wall loaded down with a hodgepodge of various kinds of pictures.

CLOAKROOMS.

Every country school should have a special room where children can hang up their wraps and place their lunch baskets in safety and out of the dust and bad atmosphere of the schoolroom. Two cloakrooms, one for the boys and one for the girls, would be better than a single cloakroom for both boys and girls; but, if a single room is properly placed, lighted, ventilated, and heated, it will serve the purpose. In the chapter on the hygienic condition of rural schools it was shown that a comparatively small percentage of rural schools are furnished with cloakrooms and that in the main the children have to hang their wraps in the classroom or stack them up in piles on unused benches. No argument seems necessary to prove that such care of children's wraps is not only untidy, but dangerous because of infectious diseases. If hooks for wraps are placed on the schoolroom walls, they will prevent the use of these walls for blackboards, render the room unsightly, contaminate the air with odors from damp or soiled garments, and absorb some of the light. Furthermore, wraps so placed will be knocked down as the children pass about in the schoolroom. Merely from the point of view of economy, it will require almost as much space to make room for hooks and passageways about the wraps within the classroom as it would to partition off a part of the building specifically for this purpose. No teacher can make a room appear attractive and well cared for when all kinds of wraps are hung upon the walls, and it is one business of the school to teach children the proprieties of life. When cloakrooms are properly located, they can be carefully supervised by the teacher, and this will lessen the probability of pilfering. The loss of umbrellas, overshoes, and other similar articles is frequently very troublesome to the teacher, as well as to the pupils. Cloakrooms are necessary, and every plan set forth in this bulletin calls for them.

LIBRARY AND TEACHER'S ROOM.

It may be repeated that the school building belongs to the whole community and not simply to the children who are attending school and the teacher who is employed. It is generally the only community property within the district, and, hence, everybody has a right to use it, under proper restrictions, and to make it the general civic center of the community. Practically all district schools throughout the country have or should have some general reference books, and they need decent places to keep these books where they can be consulted readily, easily, and without disturbance. It is not necessary in a small district school to have a large room for the library, but the library room should be made the most beautiful and interesting

one in the building. Here little touches of decoration and comfort may appear and an atmosphere of quiet study be suggested.

Many of the books found in school libraries can be used to advantage in interesting the patrons in the community in what the school is attempting to do and is doing, and a special effort should be made to collect such books as the people need. One of the general reasons why country people do not read more good books, and why they read newspapers instead, is that the newspapers are brought to them and that books, even if found in the school library, are kept there and are not readily accessible.

Many States have provided by legal enactment for the establishment and maintenance of libraries in country schools. Lists have been made out by committees and officers to guide in the selection of books. But for the most part these books must be kept on shelves or in bookcases within the classrooms and be used by the pupils at their desks while classes are being conducted. As a result the school library is not used effectively by the pupils unless the teacher has special aptitude for interesting them in the books at hand. Adults have difficulty in giving undivided attention to their reading when they are surrounded by much noise and confusion. School children have still less power to focus and hold their attention. Moreover, the ordinary classroom with its necessary discipline does not furnish the incentive nor the atmosphere of a reading room. A library room can be made attractive at little expense. It can be kept neat and tidy, and will exert a tranquilizing effect on the children who are accorded the privilege of using it. The mere experience of being in a room devoted to books and reading will create a new sort of sentiment for books and develop a love and respect for them.

A district-school library should not be restricted to the use of the pupils in attendance. The books belong to the community, and all who can make worthy use of them should have access to them. Therefore, with a special library room available, children who have left school and all adults in the district should be invited to come at any time during school hours to read and to borrow books for home reading. This use of the books would be impossible if they were kept in the classroom, for the work of the regular recitations must go on and the teacher's time be left undisturbed. In brief, the country-school library should be the public library for that community, and the school building should be designed with this in mind.

The question of the size of this room would naturally arise here. How much space can be spared, or rather, how much can be provided for a library room? There will not be a large collection of books in most of the rural schools for a long time to come, and, hence, from the point of view of providing room for books, only a small space will be needed. Shelves can be built in the walls at little expense and

without encroaching much on the space available, but a room large enough to provide for a reading table and a few chairs will be necessary. Furthermore, the library room should in many buildings, and perhaps in most one-teacher buildings, be used also as a teacher's room. For her accommodation a small wardrobe, a washstand, and a mirror would suffice. The school supplies also can be kept in this room.

The library room will afford the teacher opportunity to confer privately with patrons and school officers. Teachers will soon learn that when parents call to present a grievance it will appreciably lessen any possible friction to send them to this room where an atmosphere of quiet and dignity prevails and to allow a few minutes to elapse before conferring with them. The more beautiful and tasteful this room can be made, the easier it will be to come to an amicable agreement. For these various reasons, in many of the floor plans presented for one-teacher buildings one room is planned to serve as a library and a teacher's room.

A room 10 feet long and 8 feet wide will generally be large enough for both purposes, especially if the windows are correctly set and the shelves and wardrobe are built into the wall.

This room should open only into the classroom, so as to give the teacher entire control of it and to make it possible to keep it warm from the classroom stove. If its location should afford an opportunity to build a small fireplace in it in connection with the chimney for the classroom stove, its usefulness and cheerfulness would be appreciably increased. The floor should be stained and waxed, and some tasteful, inexpensive rugs be supplied.

If this library room can be made a sort of spiritual and intellectual sanctuary for the community, its reflex influences will be seen and felt in many unexpected ways. A tasteful, cozy, and inviting library room in some of our district schools would help mightily to develop a dissatisfaction with rusty stoves, broken window panes, dirty floors, a hodgepodge of chromos on the walls, ill-kept school grounds, and that general air of neglect so commonly seen about country schoolhouses. This reflex influence might reach beyond the school grounds.

The possible use of the library room in connection with social activities in the community needs only to be mentioned. The room would be too small, of course, to attempt to entertain in it alone, but in connection with the workrooms and the classroom, it would prove a place for some social features that would aid in making the community life more enjoyable.

If some such plans for a library room could be wrought out, and the books be selected and used with reference to the special needs of the

community, the people would soon be willing to increase the expenditure for books and would develop a commendable pride in their public-school library.

BASEMENTS.

Until recent years very few rural schoolhouses have been constructed with basement rooms, and these have been in the colder climates of the north, but with the use of basement rooms there has been a growing recognition of their value in rural schools. In the first place, a good basement furnishes the best location for a furnace for heating the building. The word "furnace" is used here instead of "jacketed stove;" the only difference between a jacketed stove and a furnace is that the jacket surrounding the furnace is open at the top only through ducts or pipes, which are devised to conduct the warm air to different parts of the building. In all essentials, a hot-air furnace is merely a modified jacketed stove. When a furnace is used in a basement, it will be possible to heat directly, not only the classroom, but the workrooms, library, and cloakrooms. This will give a much more satisfactory and even heat to the various rooms than if dependence were placed upon a jacketed stove within the classroom itself. Furthermore, it will give an opportunity to ventilate all the rooms to good advantage. By placing the heating device in the basement, space will be saved in the classroom and a greater amount of space for fuel can be economically provided than would be easily possible on the first floor.

In the second place it would obviate much dirt, dust, and confusion in the classroom. In spite of all one can do, even with the use of wood, a stove in the classroom is a source of a good deal of litter in one form or another, and it always makes the room appear untidy and ill kept. Moreover, a building is less endangered by fire when a furnace is properly placed in the basement than it is with a stove located within the classroom. There is always some danger of fire dropping on the floor, or of doors coming open out of school hours and thus endangering the building. A good basement with a cement floor and carefully protected joists above to prevent overheating from the furnace reduces the possibility of danger from fire to a minimum. A furnace also generally has a better draft than a jacketed stove set in the room above because of the greater distance between the intake of the smoke flue and the exit at the top of the chimney. The fresh-air duct can be easily arranged from the outside through the basement to the furnace without in the least disturbing the general appearance or structure of the building. In another place more extended discussion will be made of the heating of schoolrooms.

Basements are always advantageous for the location of toilets and baths. This matter will be taken up in another chapter; it

is sufficient here simply to state the fact in order to make clearer the value of basements under rural schoolhouses.

It has been said above that a basement offers opportunity for a larger fuel room than can be accommodated on the main floor. This is a very important matter. In cold climates it is absolutely necessary to have some convenient and ample space for the storage of fuel for the winter, else the teacher or the pupils will be exposed to the weather in bringing in fuel and cleaning the stove of ashes. With a basement under a rural schoolhouse, ample room can be secured for the storage of sufficient fuel to last through the winter. This can be put in before the beginning of school and will be safe from rain and snow and will be in far better condition than if it were in some detached outbuilding. It is impracticable to attempt to build a fuel room sufficiently large on the main floor to accommodate a year's supply of fuel.

Doubtless the main objections which will be raised against the construction of basements under rural schoolhouses are the expense of construction and the difficulty of keeping them in a sanitary condition. A basement should not be constructed in a school building located on flat, wet land, unless there are abundant opportunities for properly underdraining it, or, rather, surrounding it with drains so that it will not become damp or allow water to seep in during a rainy season.

The best method of keeping basements dry is to surround them with tile drains, set at least a foot below the level of the basement floor. To surround the building with tiles is better than to attempt to run a drain beneath the floor. The tiles must be large enough to carry away all of the water flowing toward the basement, and the ditch must be so constructed that there will be ample flow into it from all directions. Comparatively little local surface water sinks into the drain; the water comes up from below into the drain and is thus carried away, frequently after having traveled a long distance underground. This principle is not generally understood by those who have not had large experience with the use of drain tiles. The pressure of the water increases with the depth and naturally that lower down would be the first to escape, just as in artesian wells. If, therefore, a drain is placed all about a school building and below the level of the basement floor, there is no probability that any flow of underground water will reach the school building, for it will be carried off through the tiles thus placed.

When a rural-school building is located on high, gravelly soil, with no drainage toward it from any direction, it will not be necessary to surround the building with a drain, for a good, strong cement floor and cement walls will prevent the entrance of any moisture

that might otherwise come in. However, it is generally safer and frequently not expensive to surround the building with a drain as indicated, and this makes assurance doubly sure.

Under ordinary conditions eaves troughs and leaders should be provided to carry away the water from the roof of the building. If there are no eaves troughs, the water will fall down all about the building and saturate the ground, making it difficult to keep the basement walls dry. The water from the roof should be carried away a sufficient distance to prevent any of it from finding its way back to the basement. When a drain is placed well below the level of the basement floor, the roof water can be carried down through the leaders and through cemented sewer tiles into the drain. Care must be taken, however, to prevent the débris which gathers on the roof and in the gutters from clogging the leaders or the drain below. Generally, there should be some form of trap between the sewer tile and the end of the leaders to catch the coarser materials and thus prevent clogging.

Eaves troughs, however, have their disadvantages, especially in cold climates. Frequently, when the roof is covered with snow and the atmosphere is below the freezing point at the eaves, the heat escaping from the school room will cause the underside of the snow to melt. A part of this water will freeze in the troughs and leaders and in time they will be clogged with ice and rendered worse than useless. Some builders in the north have given up the eaves troughs and depend on a drain directly below the eaves to catch and carry away the water falling from the roof. They lay the drain a safe distance below the level of the walls, give it a good gradient, fill the space above it to within a few inches of the surface with coarse broken stone or boulders, put a thin coat of soil and sod over the broken stone, and thus let the water sink quickly to the tiles. When stone is near at hand, this method of drainage will cost less than the use of leaders and eaves troughs and has proved acceptable in many places.

Besides the difficulty experienced with ice, eaves troughs are easily clogged with leaves and are frequently broken. Constant care should be exercised to keep them in proper condition.

The space to be excavated for a basement will not necessarily be of the same size as the school building. If it seems necessary to economize, only such excavation need be made as will give sufficient space for the use of the basement as indicated.

The height of the basement is a matter that can not be definitely settled once for all; each location will offer different conditions of drainage and surrounding topography. At some places it will be possible to excavate to a greater depth with safety than at others. Besides, the size and shape of the building will have a good deal to

do with the amount of basement walls showing above the ground. Ordinarily the distance between the finished floor of the basement and the joists of the floor above is about 8 feet. If the depth of the finished floor is 4 feet lower than the surface of the ground around the building, it would be necessary to raise the foundation wall 4 feet above the surface of the ground, and unless the building is rather low and wide this would leave the foundation wall too high and make it difficult for the exterior to maintain proper proportions. If the excavation is 5 feet below the surface of the ground, precaution will be necessary to prevent the entrance of ground water and to keep the basement from becoming damp and unhealthful.

The contour of the ground and the nature of the soil, as well as opportunities for carrying water away from the building will have much to do with the depth of the basement. It is possible to make a basement, where work rooms are not to be installed, usable and sanitary when the height between the cement floor and the bottom of the joists supporting the floor above is only 7 feet. In this case it will generally be necessary, however, to set the furnace in a water-tight cemented pit a foot deeper than the level of the basement floor, so as to keep the top of it at a safe distance from the floor joists above.

UNILATERAL LIGHTING.

If the great majority of children were not right-handed, it would be unreasonable to demand that the windows be so placed in school-rooms as to admit the light from the left side of the pupils when seated at their desks. But, since we are a right-handed race, with brains organized accordingly, the great majority of children are rid of troublesome shadows in writing only when light is admitted from the left side, thus carrying the shadows away from the written work and relieving the vision from the disturbances which would otherwise come. If the reader will take a seat in a closed room near a window and attempt to write with the hand which is next the window, he will realize more fully than words can tell how the shadows of his hand and pen will trouble him. Children suffer more from such disturbances than older people, because their eyes tire more quickly and their attention is more easily distracted. Hence it is a matter of importance to the health and comfort of all right-handed children to be so placed in the school room that light should come from the left rather than from the right.

All left-handed children should be taught from the first to write with their right hands. Contrary to the general belief, this is not a serious undertaking if it is made when the child is just learning to write. If, however, a child has not been early taught to use his right hand and has reached the upper grades with an established

habit of using his left hand for writing, it is often better to let him continue rather than to insist on a late change. In all cases, however, it is only fair to the left-handed writers to seat them, if possible, so that the light may come from their right, so as to throw the shadows back of their hands. But, since the great majority are right-handed, schoolhouses should be built to meet their needs and special provision be made for those who have not been taught the use of the right hand for writing.

But some one may ask: "Why not have windows on both sides of a classroom, for is it not impossible to have too much well-diffused light in a schoolroom?" Until very recently all school buildings were constructed in this manner, and it is still hard to convince some people that lighting from one side is better than lighting from both sides.

Suppose we consider a schoolroom with east and west exposure, with the same number of windows on each side, located in the same relative positions. At 10 o'clock in the morning, other things being equal, the light is stronger from the east than from the west, and the line where the light from each side is equally strong is well toward the west side of the room. This line will shift toward the east side the rest of the day, reaching the center at noon. But at any time in the day there are always two shadows of the hand and pen. These shadows are of equal intensity only at this shifting line of equal light. Here they are comparatively inconspicuous, but still visible. To the left or right of this changing line one shadow is stronger, and hence it is impossible to seat all pupils so as to give them an equally good light for writing. There is no desk in the whole room where double shadows of the hand and pen may not be seen; but those pupils who receive the stronger light from the side opposite the hand used in writing experience less difficulty. If the heavy shadow falls athwart the work and within the focus of the vision, it will fatigue the eyes uselessly. For this reason it is impossible to seat all of the pupils in a schoolroom with bilateral lighting without imposing some slight hardship on all and a serious hindrance on something less than half of them.

There are other reasons why bilateral lighting is not to be preferred. The best place for a blackboard is directly opposite the source of light, and hence it ought to be placed on the wall of one side of the classroom. The common custom has been to place the blackboards between the windows on both sides. Such a setting of blackboards is responsible for an untold amount of eyestrain, headache, and habits of inattention. He who reads these lines and can not recall from his school days a distinct memory of pain from such blackboards will understand the justice of the criticism if he will face an unshaded window and attempt to follow the demonstration of a problem

whose solution is worked out on a board adjoining the window. It must be remembered that the eye is to a large degree an automatic or reflex organ and accordingly accommodates itself to the light entering it. If one looks at work on a blackboard adjoining a window, a conflict in the demands of vision takes place. The strong light from the window causes the pupil to contract so as to reduce the number of rays of light which would otherwise enter the eye and overstimulate and shock the retina. But this is just the opposite of what the eye demands in order to read easily what is written on the blackboard; for when the eye is focused on a dark surface the pupil expands so that all the needed available light may enter. This conflict is the cause of much eyestrain, fatigue, and the accompanying revulsions.

Young children should not spend much time studying work written on blackboards; but we can not do without blackboards nor without frequently directing the attention of the children to work placed on them. It may be argued that there would be space enough on the end walls for all the blackboards needed, and that it is unnecessary to locate them between windows on the sides. Frequently, however, the teacher's end of the room is broken by doors to cloak-room, fuel room, or library, and all the available blackboard there found is needed for assignments and directions. The rear of the room, even if not broken by doors, is too far removed from many of the pupils to make a blackboard placed there effective for class demonstrations. Besides, the light on the end of the room is generally not so good as it is on the wall directly opposite the light. It is a rational conclusion, then, to say that even if unilateral lighting were not in accordance with the demands of hygiene it would still be wise to locate all the windows on one side, so that the other might be used for blackboards.

Contrary to the usual belief, light coming directly from above the desks introduces more disturbing shadows than that coming from the left. For this reason alone lateral lighting is generally preferable in schoolrooms to sky lighting, though the latter is often helpful in cities where tall buildings obstruct the light or where troublesome reflections from outside buildings are likely to overstimulate and fatigue the eyes.

Chapter VII.

PLANS FOR RURAL SCHOOLHOUSES.

The various plans exhibited in this bulletin are introduced for the purpose of furnishing to district-school authorities some specific suggestions to aid them in the planning and construction of rural schoolhouses. The variety of plans corresponds to the varying conditions met with. Some communities are able to construct buildings of ample size; others are limited in means. Some neighborhoods, with small school population, need small buildings; others, whose school population is growing, need larger buildings. Some communities can command the means to equip a building with modern conveniences; others will have to reduce expense to the minimum; and some must think of consolidation and the sort of building and equipment such conditions demand. Problems of rural education are so diverse that no one building can be designated as a standard building. There are some conditions which every building ought to meet and which have been set forth briefly in the earlier chapters of the bulletin; but, in other respects, country school-buildings must be constructed to meet the demands of the particular neighborhoods which they are to serve.

Model No. 1.

The first model presented is that of a one-teacher school building, including one cloakroom, a teacher's room, a library, a workroom for the girls, a fuel room, a toilet for the boys and one for the girls. This building is designed to accommodate about 40 pupils.¹ The plate showing the interior arrangements of the various rooms is from a photograph taken of the model with the roof removed. The number of desks shown in this cut is too great. The desks are properly located, but each will occupy more space than is shown in the illustration.

It is to be noted that in this building the main entrance is on the side. This, as has been said in the discussion on the location of the schoolhouse, is not, in general, the most satisfactory place for the main entrance to a one-teacher rural school building, because in a way it necessitates placing the long side of the building toward the roadway from which the entrance is made. However, school officers

¹ See plate 6.

are sometimes compelled to select a location with east or west frontage, and in such locations, if the main entrance is placed in the end of the building, the broad sides of the rooms would lie north and south, and this would make it exceedingly difficult to secure good lighting. The floor plan of this building was drawn with this difficulty in mind and is designed to help solve it. This plan can be used on a lot fronting east or west, and in either case will get good lighting. The plan contemplates facing west, so that the classroom would be lighted from the east. This will shield the classroom from the north and west winds in winter, and also, to some degree, from the heat in summer. The only difficulty with this orientation would be that the workroom, designed for the girls, would have only north light. If the building were faced toward the east and dependence were placed on west light for the classroom, then the workroom and library would get the south



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FIG. 1.—Front elevation, Model 2.

exposure. The choice between the two orientations should depend on local conditions. Either will be, in the main, satisfactory.

In this building toilets are shown for the boys and the girls, the one for the boys being just to the left of the entrance from the outside, and the one for the girls opening off the workroom, which is largely designed for the special work that girls will engage in. Some objection might be offered to opening the girl's toilet into the workroom. It would be better if this could be easily avoided, but since this workroom will be occupied for the most part by the girls, it will be easy for the teacher to maintain proper privacy in it. If, however, it should seem advisable to use this workroom for both boys and girls, the program for the boys can be so arranged that no inconvenience for the girls will arise. Furthermore, the door into this toilet room may be made through the fuel room by slightly enlarging the space for the fuel room and that marked for the girls' toilet, and thus due privacy could be maintained. Of course where running water is not available, the toilet rooms shown could be left out or be used for other purposes.

The boys' room could be easily transformed into an additional cloak-room, and that for the girls be thrown into the fuel room or used as a tool room. The time is coming soon, however, when washout toilets will be more common in country schools, for the pressure-tank system of water supply will meet this demand.

In this building the light for the library comes from two sides, and the room will therefore be well lighted and properly purified by sunshine. Those who read or work in this room can easily adjust themselves so that there will be no need for anyone to face the light. The room is arranged to open only from the classroom and is thereby under constant and direct control of the teacher. Bookcases should be built in the walls. There will then be plenty of room for a reading table and chairs for those who are sent here to do their work. This library room should be made as attractive as funds will permit. The

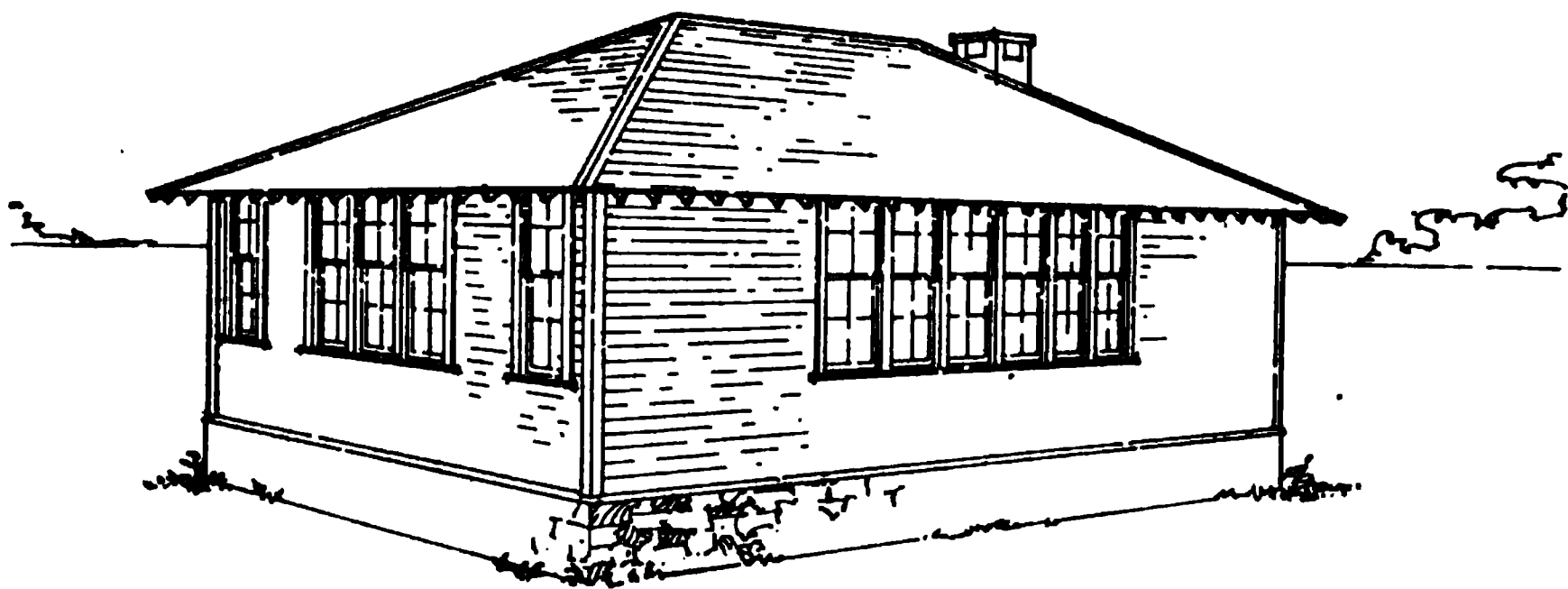


FIG. 2.—Rear elevation, Model 2.

children will consider the privilege of using it as a sort of reward of merit, and the teacher can use it effectively for many purposes.

The use of the workroom will, of course, depend upon many conditions. It will be noticed that the chimney passes up through this room, and hence a small range could be placed in it and the girls be taught scientific cookery. Tables and cases could be located in it for the purpose of teaching the designing, cutting, and making of girls' clothing. If the boys are to be taught also in this room, a workbench could be installed and certain lines of manual work could be engaged in.

The cloakroom to the right of the main entrance is designed for the use of both the boys and the girls, and has a door opening directly into the classroom. By a little careful supervision and proper arrangement of hooks, cases, and shelves, this room should be ample for the number of pupils it is designed to accommodate. If, however, at times the older girls should need a little more privacy, the workroom could be utilized for them.

The teacher's room is located off the front end of the classroom and is designed as a private place where the teacher may keep her wraps, and, if need be, keep the supplies for the school. In this plan, the teacher's room need not be utilized in any way as a reception room, for the library can better serve that purpose.

The classroom receives all of its light from one side, and the windows on this side are placed well to the rear. The bottoms of the windows are 4 feet above the floor, and their tops extend to within a few inches of the ceiling.

The cubical contents of this building between the floor and the main ceiling and the outside walls is approximately 15,700 cubic feet. The cost of construction, of course, will depend upon the kind of material used on local markets, both as to material and labor, and the kind of finish and furniture used on the interior. The model from which the photographs were made was designed and constructed by Messrs. Cooper & Bailey, architects, of Boston. There are no difficulties in the way of construction.

The interior floor plan can be modified to some degree without serious disturbance; for example, if the library were furnished with a wardrobe to accommodate the teacher, the cloakroom could be enlarged to advantage. However, it would be a mistake to put anything in the library that would have a tendency to limit its usefulness or disturb the opportunity for making it attractive and beautiful.

As has already been said, if the workroom is to be used for both boys and girls, it would then be advisable to open the door into the girls' toilet from the fuel room. The fuel space could be boxed in, and there would be sufficient passageway through the fuel room into the toilet room. This would make the location of this room less objectionable.

A closer view of this building shows that the front steps are shielded partly by a small overhanging roof. The front door is protected from the weather. The floor of the open passageway should be cement or terrazzo. The only objection to leaving this passageway open to the outside as indicated is the danger of tramps or other disreputable travelers taking advantage of it as a place to tarry at night. If need be, the steps could be set in and double outside doors could be included. In the milder parts of the country this outside door would not be necessary. In colder northern regions the outside should be closed with double doors, thus preventing the snows from drifting in.

It would be a pity to disturb in any way the lines of the exterior, the pitch of the roof, the width of the eaves, the height of the windows, the height of the gables, or the lines of the windows, for they all blend into an almost perfect unity. A building with such delicate lines as

this should not be marred with eaves troughs or leaders. The wall should be protected by a tile drain all about the building located directly under the eaves, as described on a preceding page.

The little touches of art indicated in the style of the window sash may be neglected without any serious disadvantage. The color of the model shown by this photograph is pure white. It would not be at all necessary to follow this color scheme in a building constructed after this model; in fact, the building would be less conspicuous and more beautiful if a darker neutral shade were used for the roof and the sides. A dark weathered brown for the outer walls and a dark

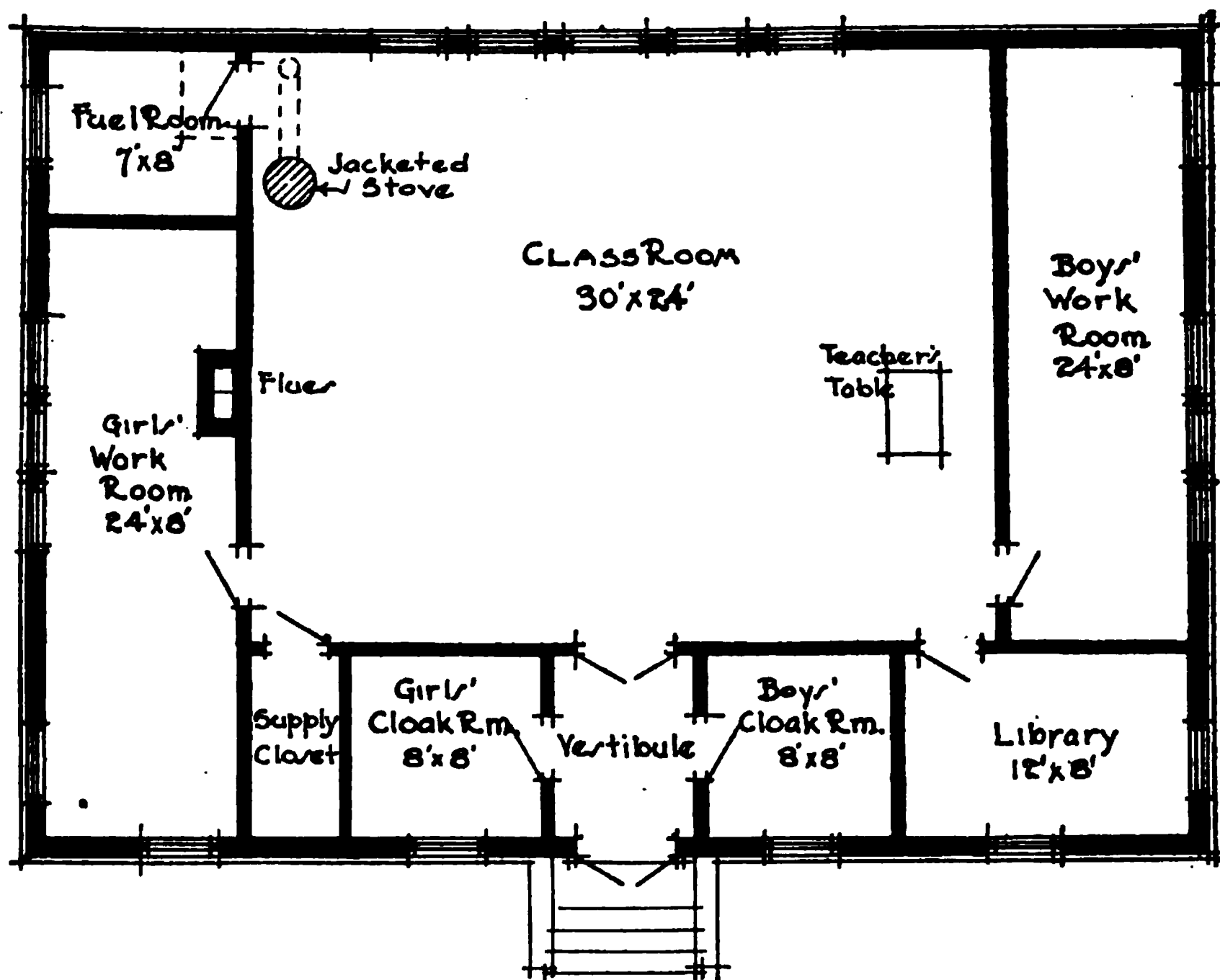


FIG. 3.—Floor plan of one-teacher school, Model 2.

moss green for the roof would make the building blend much better with the average country neighborhood than if it were treated in white. Any carpenter or builder should be able to take the measurements of these drawings and photographs and construct this building in exactly the same beautiful form.

Model No. 2.

The above floor plan of model 2 shows a one-teacher rural schoolhouse, with a classroom in the center of the building, and with the workrooms and library grouped around it on three sides. This building is also designed, as in model 1, to occupy a lot having an east or

west frontage, and to make an entrance in the side of the building. If the front of the building is situated on a lot facing west, then the lighting of the classroom would come from the east, and the boys' workroom would receive the south light, the girls' workroom would receive north and west light, the library would have south and west light, the cloakrooms would both receive west light. However, this building could be located so as to face east and be equally well situated with reference to the lighting. The advantage in facing it west lies in the fact that the classroom would be shielded somewhat in winter from west and north winds. This plan is more elaborate than the first one, because it has two workrooms, one for the boys and one for the girls.

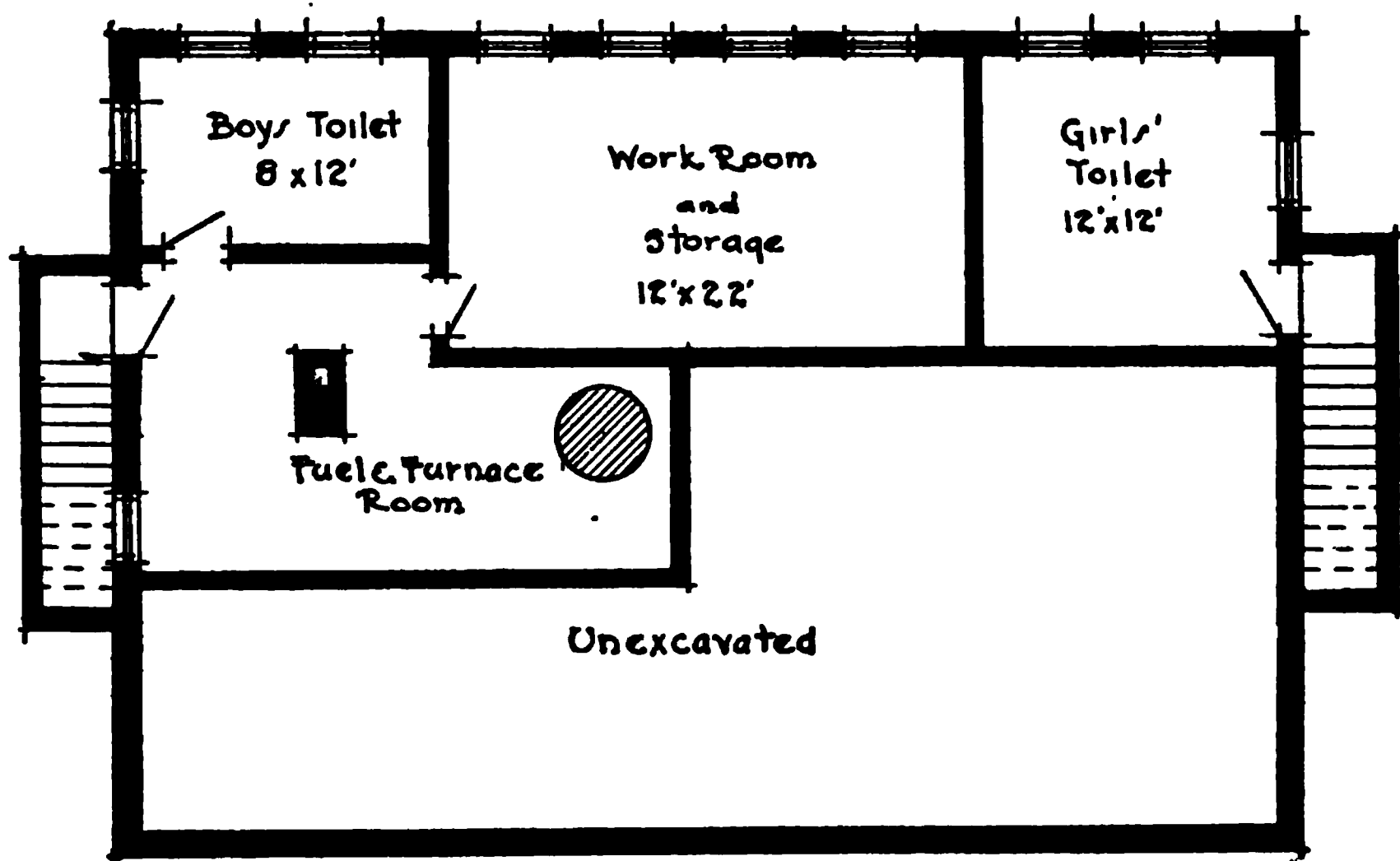


FIG. 4.—Suggested basement for Model 2.

This is a decided advantage. It gives room for different kinds of manual training equipment, and develops a sense of responsibility in both boys and girls by having special rooms for their special work. The library is not quite so large, but there are two small cloakrooms, one for the boys and one for the girls; in addition, there is a fuel room in the rear of the classroom and a small room for tools, drawers, and cases adjoining the girls' workroom.

No toilets have been planned in this building, and the basement would have to be arranged for them or else detached buildings used. The accompanying drawing (fig. 4) shows how the basement could be arranged both for heating apparatus and for the location of toilets and baths and offers suggestions to those neighborhoods with sufficient funds at hand and opportunity to supply running water.

The classroom, as was said, is situated in the middle of the building, with only one outside wall. The windows in this room have been

grouped closely together on the rear and left of the children when in their seats. The windows are set 4 feet above the floor and are 3 feet wide and 8 feet high. The distance from the finished floor to the ceiling is $12\frac{1}{2}$ feet.

Blackboards in this room are set on three sides of the room; none are on the window side. At the front end of the room, near the teacher's desk, the blackboard should be set $3\frac{1}{2}$ feet above the floor and should be $3\frac{1}{2}$ feet wide. On the other sides it is better to set the blackboards 28 inches from the floor and to make them 4 feet wide.

Wainscoting should be placed beneath the windows and beneath the blackboards all around the room. On the window side, this wainscoting should reach to the lower part of the window casing; on the other side to the chalk trough.

The walls above the wainscoting and those above the blackboards should be plastered with the best material and, before the building is used, should be tinted a light grayish buff or a very inconspicuous shade of grayish green. The colors of the red end of the spectrum should not be used in a schoolroom.

If a basement is provided under this building, the entrances to it should be from each end, beneath the workrooms, and these entrances should be guarded by some form of covering that would harmonize with the architectural design of the building. A furnace could be located at the most convenient place in the basement, preferably near the center, and from that point hot-air pipes could be carried to the workrooms, library, and classroom.

If provision is made for a fuel room in the basement, a fuel room on the main floor will not be needed, and that room could be utilized as a teacher's room. The floor plan was drawn on the supposition that no basement would be provided, and the location of a jacketed stove and chimney are indicated. If a basement is provided, as suggested, walks should extend around the building and provision should be made for tile drainage.

The classroom is 30 feet long and 24 feet wide and has desk room for 35 to 40 pupils.

The boys' workroom, situated immediately back of the teacher's desk, is 24 feet long and 8 feet wide. It is lighted entirely from one side and has a door opening into the classroom near the library room. Cases could be built in the outer end of the boys' workroom for tools and models used in connection with the shopwork.

The girls' workroom as shown is approximately 25 feet long and 8 feet wide and is lighted from two sides. A door opens into this room directly opposite the door into the boys' workroom, and thus allows passage along the wide aisle between the last row of seats and the inner wall.

Blackboards should be set in both of these workrooms on the inner walls and should be $3\frac{1}{2}$ feet above the floor and 3 feet wide. These blackboards can be used for many purposes, but are chiefly designed for drawings, lesson assignments, and plans in connection with the work done in these rooms.

The small room adjoining the girls' workroom, marked "storage room," can be fitted up with drawers and shelves for sewing materials and also for kitchen utensils.

The library room opens directly off the classroom, near the teacher's desk. This library is designed to be 10 feet long and approximately 8 feet wide. Bookshelves should be built around the wall in those spaces not occupied by the windows and the door. These shelves should not be more than 9 inches deep, and hence there will be room for a small reading table and a few chairs. The walls above the bookshelves should be tinted the same color as in the classroom.

The cloakrooms, opening left and right from the vestibule, have one door each and are designed to communicate only with the vestibule. Were it not for the fact that the blackboard space on the wall in the classroom opposite the windows would be greatly limited, a door should open into the classroom from each of these cloakrooms. This arrangement would give the teacher better control and would prevent some congestion in the cloakrooms, but unless the blackboards in the workrooms could be utilized for some of the regular class work this change would not be advisable.

To prevent annoyance, all doors opening into the classroom should swing out. This applies to the doors of the workrooms, library, vestibule, and fuel room.

The chimney passes up through the girls' workroom. This will permit the one chimney to serve both the jacketed stove or furnace and a range for the girls' workroom.

The floors of all rooms of this building should be double, except the vestibule, and that should be of cement or terrazzo. The upper floors in the other rooms should be made of hard pine, selected maple, or oak boards.

The wainscoting throughout the building should be stained a neutral brown, so as to reflect no high lights into the eyes of the pupils while they are at work. The roof should be of rather flat construction, preferably hipped.

The windows into the cloakrooms, as will be noticed, are set 6 feet above the floor, so that the walls beneath them can be used for clothing hooks. This provision will give plenty of light, and it also relieves the architectural features of the building to some extent.

The model from which this drawing was made was designed by Mr. William B. Ittner, of St. Louis. The drawing does not show

the real beauty of the exterior. The model was not in condition for photographing, and this drawing had to be made instead.

The dimensions of this building are 46 by 32 feet. In rural communities where there are opportunities for utilizing the school for general social purposes, it would furnish plenty of space. The girls' workroom, the boys' workroom, and the library especially lend themselves to uses of this kind. With a range in the building, light refreshments could be easily prepared, and this, as every one knows, would add greatly to the success of any social undertaking. If a teacher who understands how to organize a district school to meet the demands of the community were located in such a building as this, it is needless to say that she could at once interest the whole community in the rural life problems undertaken in the workrooms as well as in the classroom.

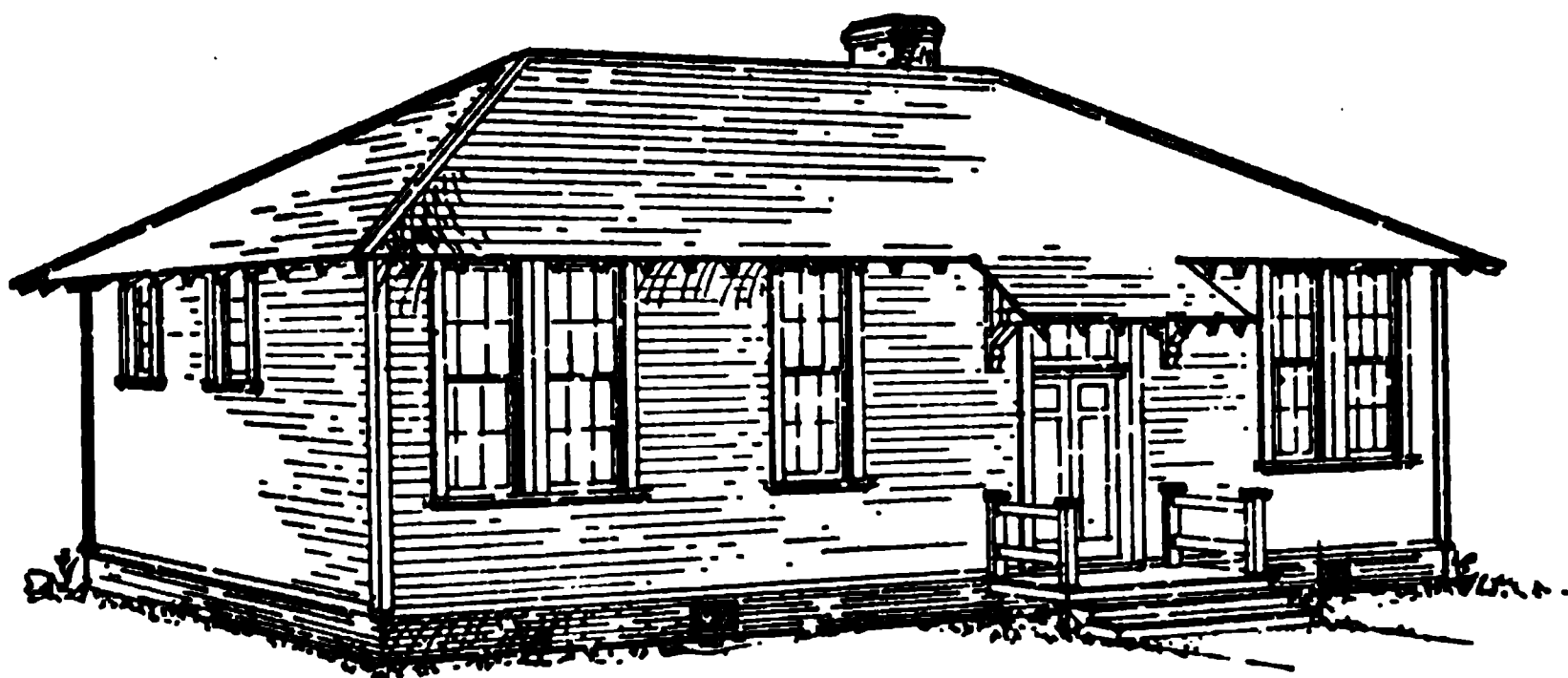


FIG. 5.—Sketch of one-teacher school designed by J. L. Sibley (See p. 107).

Naturally, this building should be located on good soil, with sufficient ground about it for agriculture and gardening, as well as for playgrounds.

Model No. 3.¹

Model No. 3 represents almost the minimum of rural school equipment. Separate entrances connected with cloakrooms are made for the boys and for the girls. From these cloakrooms doors lead into the classroom, which, as will be seen, is designed for a district with comparatively few children.

The dimensions of the classroom are 18 by 24 feet. The architects have indicated the placing of 35 desks. This would give a little less than 13 square feet of floor surface to each pupil. This would not be sufficient, unless most of the children were of the primary grades. Such a building as this should be used for not more than 30 pupils.

In the rear of the classroom provision has been made for a fuel room, and also for a furnace which would introduce the fresh air into the room at a height of about 8 feet above the floor. The chimney is

¹ See plate 7.

placed at some distance from the furnace on the other side of the fuel room, and is designed to have a vent flue opening from the schoolroom near the floor line, in this way utilizing the heat from the furnace to create a circulation of air in the schoolroom. Possibly it would have been better if the chimney had been placed near the center of the partition, so that the smoke pipe leading from the furnace to the chimney would not be so long, and hence less dangerous, and also to prevent dead air space near the window side of the room. However, this suggestion is not of great importance, because there is less danger of dead air space near the windows than on the opposite side of the building.

The storeroom off the fuel and furnace room is designed simply for brooms, brushes, and such material as a janitor would need. A separate entrance is marked for the janitor. This does not seem at all essential, but does make an easy method of introducing the fuel.

The classroom is lighted abundantly from one side alone. The windows are placed, approximately, 4 feet above the floor and run up to the ceiling. It will be noticed that the ceiling of the cloakrooms and the fuel room will not be so high as that of the classroom on account of the method of roofing. This will be a definite saving and will introduce no serious difficulty.

Two small windows, one in the rear and one in the front of the classroom on the right of the pupils' desks, may be included for the purpose of ventilation during warm weather. If these windows are inserted, they should be placed above the blackboards and so arranged that they may be opened easily from the floor. They are not designed for light, but are "breeze windows." These will relieve the rather bare side of the building, and give a better general effect architecturally.

The rather elaborate steps and overhanging roof give a quaint effect to the building, and would not be at all difficult or expensive to construct.

The light in the cloakrooms is preserved by cutting away the broad eaves immediately over the windows in front of the building.

As noted above, this building is planned for almost the minimum activities of a rural school, and may be of service in those communities which can not undertake to build a more elaborate structure, designed for a larger educational program.

The chalet effect in this building would be especially pleasing on a bench level of a hillside, with the windows facing up or down the valley. Such a position should be chosen only when there is a sufficient amount of level ground to afford playgrounds and such gardening as a school of this size would undertake. The building should face south, preferably, so as to get the west light in the classroom and the south light in the cloakrooms. If it faced north, the classroom would

get east light, which is frequently better than west light, but the cloakrooms would not get as much sunshine.

This building especially lends itself to the clapboard form of construction; that is to say, the weatherboarding could be unplanned lumber fastened to an inner sheathing and then stained some color that would blend with the trunks of the forest trees. The long, flat roof and extended eaves give it beautiful lines, and if the grounds were treated to suit the building it would make a most attractive small rural schoolhouse. This building should not be treated in any other way than in wood; it would not suit brick, stone, or cement.

The cost of such a building ought to be very low, for it would require very little lumber, and the plan is so simple that any builder could easily construct it from the data given in the floor plan and the photograph. These are all drawn to scale, and although they are much reduced in the photograph all the working drawings could be made up from the data here given.

In the classroom in this building the blackboards are on three sides of the room, none at all being on the window side. The main blackboard is on the wall directly opposite the windows. Since this building is especially designed for primary pupils, the blackboards should not be set above 28 inches in height, except at the teacher's end of the room. The width of the board should not exceed $3\frac{1}{2}$ feet.

Model No. 4.

Drawings showing the basement and floor plans of model 4 are here inserted and described. This model was designed for a small village school or a consolidated rural school in which two teachers would be sufficient. The basement plan includes toilets and baths for both girls and boys, with dressing rooms attached, and a fuel and furnace room.

In order to economize space and lessen expense, entrances to the basement rooms are made at each end from the outside of the building. Some simple harmonizing covering should be devised for the stairways leading down into the basement, and walks should be constructed along the whole front of the building and on the two ends leading to the basement steps.

The entrance to the furnace room could be made through the boys' bathroom or a separate door for it could be opened on the outside. It would be simpler and cheaper to open this door through the boys' room, as indicated.

The drawing for the basement shows half of the space underneath the building excavated. If funds permit and the location be suitable, the whole area underneath the building could be excavated, and, in addition to the toilets and baths and furnace room, work-rooms for boys and girls could be easily constructed. This, of course,

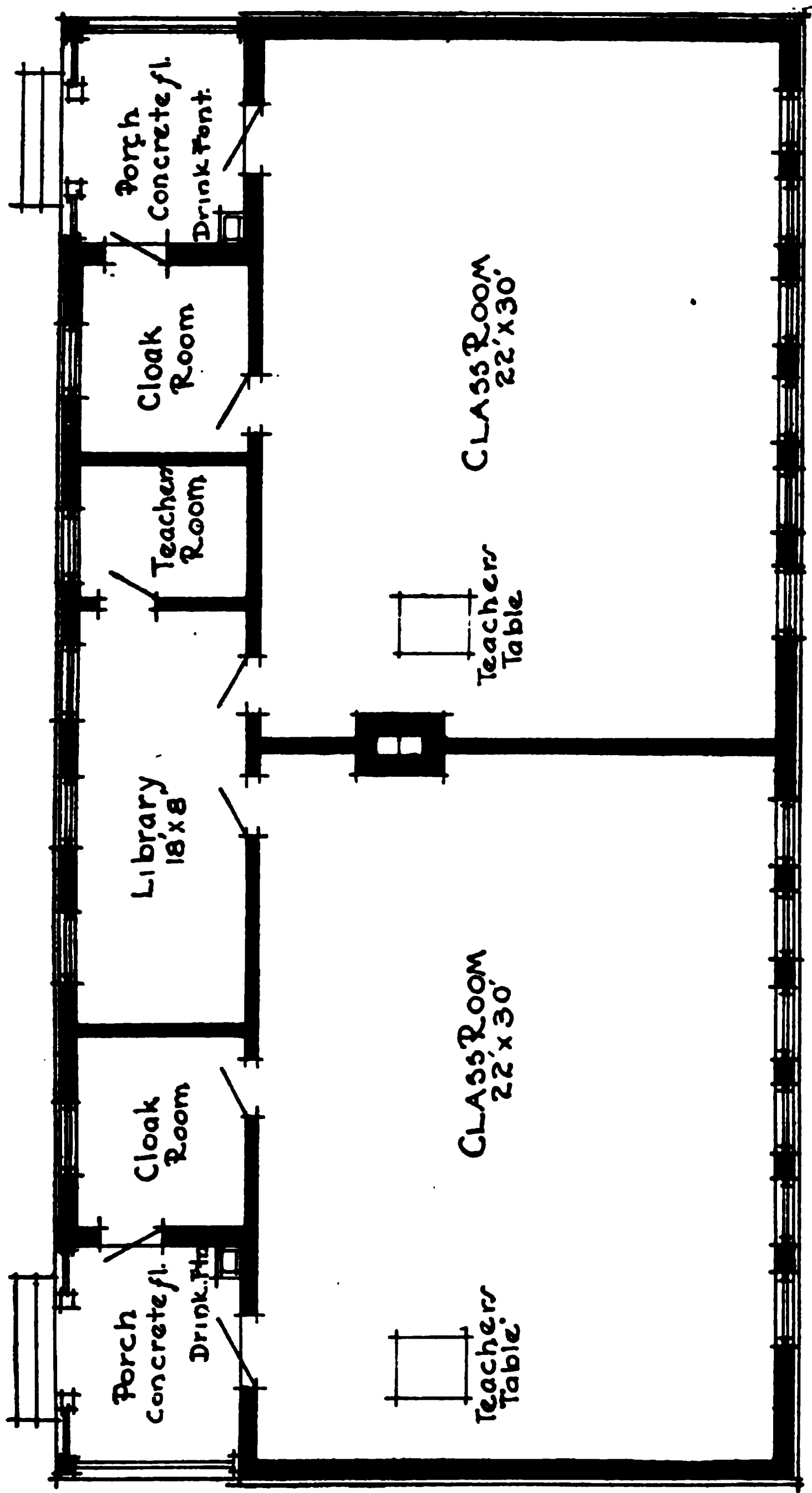


FIG. 6.—Floor plan, Model No. 4. Two-teacher school.

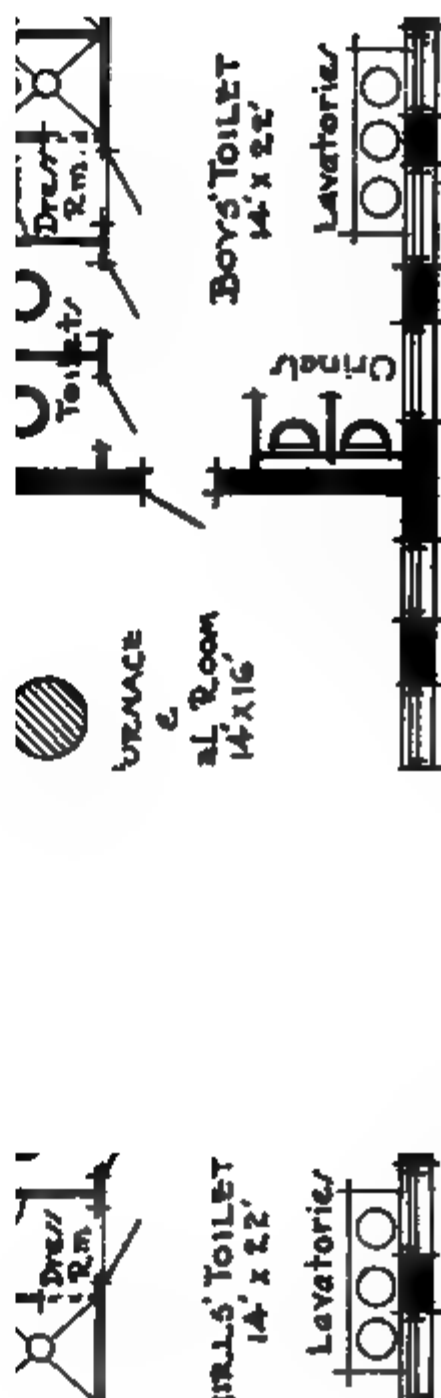


FIG. 7.—Basement plan, Model No. 4, Two-teacher school.

would necessitate lifting the building somewhat higher above the surface of the ground in order that the excavation would not be too deep to interfere with sufficient light and proper ventilation in these workrooms. However, the building should not be lifted much higher above the surface of the ground than shown. Light could be arranged for two sides in each of these rooms. The stairways to the basement could lead into the workrooms rather than into the toilet rooms, and connecting doors from the workrooms to the toilet rooms could be easily provided.

The drawing shows a shower bath and two dressing rooms for the boys, and the same conveniences for the girls. The furnace room is shown sufficiently large for the storage of fuel.

The chimney is set to pass up through the center of the building, through the partition between the two classrooms. If a workroom for the girls is devised in the basement, an additional flue in this chimney should be constructed to accommodate a range.

The basement plan as shown makes provision for the introduction of ample light and sunshine. A basement of this sort, with the sanitary appliances indicated, could not be equipped unless running water and either a sewer outlet or an ample septic tank are available in connection with the toilets and baths.

The floor of the basement rooms should be carefully cemented, and the walls plastered with hard cement plaster; and some form of waterproof paint should be used throughout the rooms.

The ceiling of the furnace room should be carefully constructed, so as to avoid the possibilities of fire from the furnace. If need be, the furnace could be set in a pit a foot lower than the floor of the basement; but, with such an arrangement, especial care should be taken to prevent seepage of any water into the pit.

The drawing also shows that the dressing room, the stalls for the seats, and the urinals all face toward the windows. This will insure better sanitary conditions and will also make it much easier for the teachers to inspect the condition of these rooms.

A fresh-air inlet for the furnace should be built from the window side and the duct be so placed that it will not be in the way of the fuel. The location of this duct will depend somewhat on local conditions; it is therefore not shown in the drawing.

The floor plan (fig. 6) of this building shows two entrance porches, a cloakroom for each classroom, a library connecting with each classroom, and a teachers' room off the library.

The dimensions of the classrooms are 22 by 30 feet, with light entirely from one side. It seems unnecessary to introduce breeze windows into either of these classrooms, because the outer door in each room

opens on a covered porch, and, if a breeze is needed, this door can be left open. Additional help in the way of a breeze could also be obtained through the library by opening the doors from the classrooms into the library and throwing open the windows of the library.

The windows in each classroom are grouped to the left and well to the rear of the pupils when seated at their desks, thus insuring plenty of light. The windows are designed to be 3 feet wide and 8 feet high and to be set 4 feet above the floor. The mullions between the windows are to be not greater than 12 or 14 inches. This arrangement of the windows would give a glass surface a little greater than one-fifth of the floor surface and, with this size of classroom, would insure abundance of light under any ordinary conditions of proper orientation. Sufficient blackboard room is furnished by using the rear and front walls of each classroom and those parts of the inner walls not broken by doors. No blackboards should be placed on the window side.

The height of the classroom should not be greater than $12\frac{1}{2}$ feet from finished floor to the finished ceiling, as indicated in the previous plans. The finishing and tinting of these rooms should follow the general plan indicated in connection with the other models.

If it seemed better to dispense with the teachers' room and instead supply a wardrobe for each teacher, the library room could be enlarged to advantage by including the space marked off as a teachers' room. This would give a library room 24 feet long and 8 feet wide, which could be made the most attractive and inspiring place in the building.

Doors are indicated in the cloakrooms opening out on the porch, so that when children come to school they may hang up their wraps before coming into the classroom. However, these doors could be dispensed with, and the inner door indicated would suffice. This, of course, would make more congestion in the cloakrooms, but it would give the teacher better control, and thus prevent pilfering and carelessness in the cloakroom.

Warm-air ducts are shown in the corner of the library room and the teachers' room. These come from the furnace below and should open into the classroom approximately 8 feet above the floor. The size of these ducts will depend somewhat on the location of the furnace and their complete insulation from the cold air underneath the building. There ought to be also a warm-air duct opening into the library. The location of this is not indicated, but can be easily supplied in connection with the duct already indicated in the library. In rigorous climates foot warmers should be introduced along the front of a seat situated near the front of each room.

The windows opening into the cloakrooms, library, and teachers' room should all be of the same dimensions as those in the classroom and should be located in the same manner.

The porches should have cement floors and, instead of a boxed entrance as indicated in the photograph of the model (plate 9), steps could be arranged partly inside and partly outside the full length of the front side of the porch. The open end of the porch should be shielded by a banister or a solid wall 3 or 4 feet high.

The drawing suggests that a water cooler could be located in the inner corners of the porch. This position also would furnish excellent opportunity for a drinking fountain and would be safe except in extreme cold weather, when the water could be turned off and some temporary arrangement made for supplying proper drinking facilities. Local conditions and climate will have so much to do with these arrangements that only suggestions are possible.

The photographs of the views of model 4 show how the building would appear from the outside. The only difference between the photographs and the description given is with reference to the entrance steps to the porch. While the illustration hardly indicates it, this is a beautiful, simple model for a two-teacher country schoolhouse. These models, used as they have been in many different parts of the country, were not in good condition for photographing, so that they do not appear to the best advantage in the illustrations.

The roof has wide eaves and is comparatively flat. No attempt at decoration is manifested aside from pleasing proportions.

This building could be treated either in wood, cement, or brick in an effective way. If constructed of wood, it should not be painted white, but in a color to harmonize with its environment.

If eaves troughs are used on this building, the leaders should be placed in the rear so as not to harm the effect of the lines of the front. If a tile drain were placed about the house, as indicated in previous discussions, and the steps to the basement were properly and effectively guarded from beating rains, no eaves troughs would be necessary, for the roof is wide and low and the water could be carried off by the drain as fast as shed from the roof.

If a building following this model were constructed on a good location, fronting east or west, and the garden treated to harmonize, there is no doubt that a very beautiful and attractive rural schoolhouse would result.

The writer is indebted to Mr. William B. Ittner, of St. Louis, for constructing this model on a floor plan which was suggested to him.

This plan is commended to those village and country school officers who desire to get a good building with minimum cost. Those who undertake to copy it ought to try to get the same effect in the proportions as here shown.

Model No. 5.

Model 5 represents a three-teacher school building, having a library and a girls' workroom on the main floor, and a basement, including baths and toilets for both boys and girls, a workroom for the boys, and provision for two small furnaces and a coal bin connected therewith.

Entrance to the basement is gained from either end of the building through a vestibule. The girls' toilet and bathroom is not accessible from any other part of the basement. The entrance to the boys' workroom is near the foot of the steps leading to the basement, and the boys' toilet is entered from an adjoining door. Entrance to the furnace room and coal bin is down the stairs used by the boys.

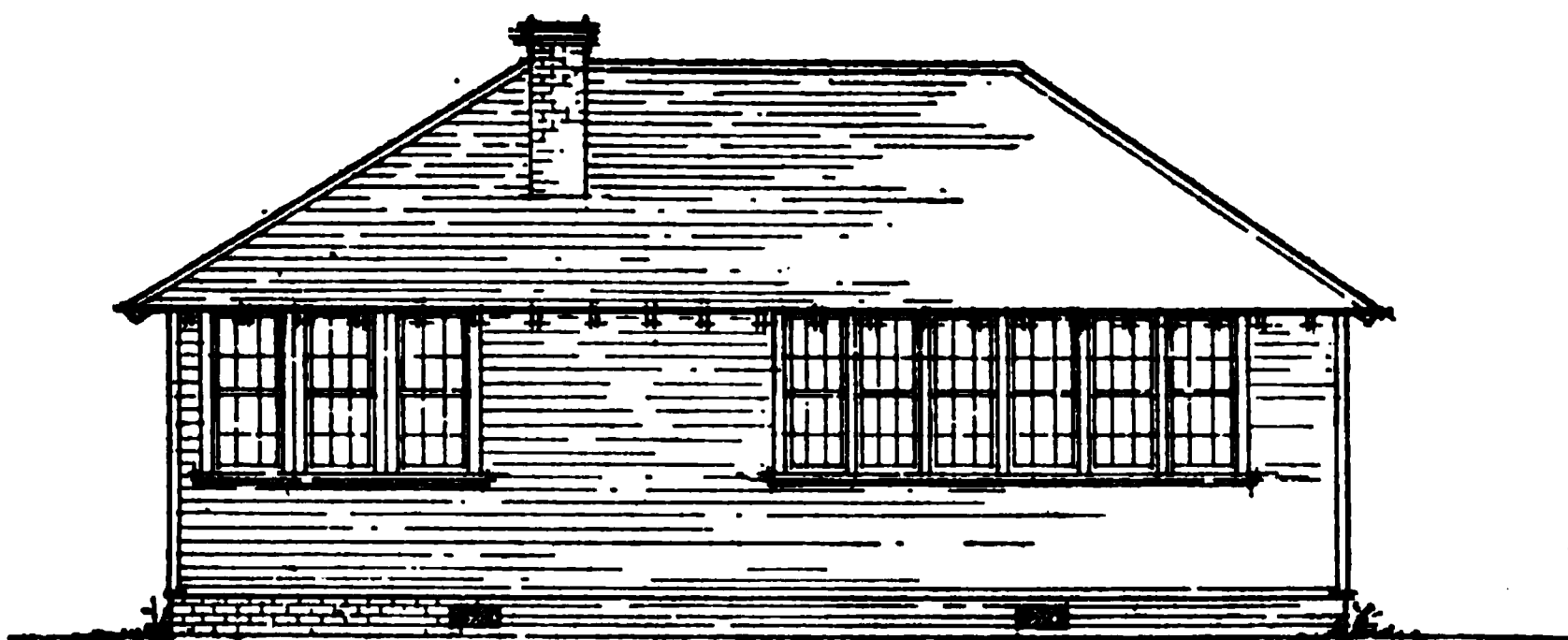


FIG. 8.—Rear elevation, rural school designed by J. L. Sibley (see p. 107).

A three-teacher schoolhouse is one of the most difficult to plan. In reality this building is what might be termed a "four-roomed" building; but the space for one classroom and its necessary cloak-room has been utilized for the library and the girls' workroom. A building of this type would be well adapted for a centralized or consolidated school in a sparsely settled district.

Two furnaces are shown.¹ One large furnace would be ample, and it could be situated nearer the center of the building, relieving the boys' workroom, and making it easy to conduct the heat from the furnace to the various rooms in the building. If this change from two furnaces to one is made, as indicated, special care will have to be taken to provide an ample inlet for the fresh air, and this would probably be done better by constructing a narrow passageway ending near the furnace in a galvanized duct. This would prevent a good deal of friction and insure a better supply of fresh air.

Dressing rooms for the boys could be easily constructed along the inner wall next the workroom.

The illustration shows three showers near the outer end of the girls' toilet room and two near the entrance.¹ It seems that three showers

¹ See plate 8B.

would be ample, and that the two squares marked "showers" near the steps could be utilized for dressing rooms.

Ample lighting for the basement rooms is indicated, especially if the small furnace in the boys' workroom is removed and a larger furnace put nearer the center.

If this building is located on a slight elevation, in good soil, the basement can be excavated to the depth of $4\frac{1}{2}$ feet, and the distance from finished floor to the ceiling of the basement would be 9 feet, thus giving windows 4 feet in height on those sides of the basement requiring the greatest amount of light.

The plan has been designed for a consolidated rural school where running water is available, where good drainage can be obtained, and where a septic-tank disposal can be introduced.

Plate 8A was made by removing the roof of the model, raising the model on edge, and photographing it down through the interior.

It will be necessary to face this building north or south in order to insure the proper lighting for the rooms above ground as well as for those in the basement.

The classrooms are 30 by 24 feet, and this photograph of the interior shows provision for 48 desks in each room. This is too great a number; instead of 6 rows, only 5 should be provided. This will give better space for aisles and will not overcrowd the room. In the primary grades, however, if conditions demand 6 rows, they may be introduced, because desks for primary pupils are not so large as those for the upper grades.

Each classroom is lighted entirely from one side, and the desks are so arranged that the pupils get the light from the left side. The windows are placed to the rear and left of the pupils when seated at their desks, each room being provided with 5 windows, 3 feet wide, 8 feet high, and set 4 feet above the floor.

The distance from finished floor to the finished ceiling in all of the rooms on the main floor is $12\frac{1}{2}$ feet.

In addition to the three classrooms, a girls' workroom and a library are provided on the main floor. The girls' workroom is lighted from two sides; the library gets its light from one side only. It seemed better to give the girls' workroom the advantage of the light and ventilation, because such work as they engage in will necessitate in part, at least, better light than would ordinarily be needed in those parts of the library some distance from the windows. The space near the windows in the library can be utilized for reading tables, and the space nearer the halls can be left free for bookstacks and magazine tables.

It will be noticed that the chimney is so placed as to come up through one wall of the corridor and a cross wall between two class-

rooms. This will necessitate a very little amount of projection either into the corridor or into the classrooms.

Provision is made for inlets for the warm air, if a hot-air furnace is used, and for exits on the same side for each room. The arrangement of these ducts and exits should be studied very carefully, so that each room could ordinarily be kept at the same temperature.

By reason of the foreshortening in photographing the interior of the model, the walls seem to be spread across the center and make the floor look a little irregular; but this photograph has been introduced in preference to line drawings, for it shows a great many more features than an ordinary drawing could show.

A cloakroom, opening into the classroom only, is shown at one end of each classroom. These are lighted from the outside and are ample for all of the children in each room. Provision for two doors, opening into the corridor, was made for each classroom. If it should seem more advisable to introduce but one door from the classroom into the corridor, this change can be made without any difficulty.

From the vestibule a series of steps leads up to the corridor and another series down to the basement. Double doors are indicated in the model at the head of the steps leading up into the corridor. This isolates the corridor and the rooms opening into it from any possible contamination of the air from the basement. These doors at the end of the corridor should be fitted with large panes of glass, so as not to obstruct the light. Outside doors are shown at each entrance, and these could be left open during the school session, thus preventing bad air from getting into the corridor or classrooms from the basement. These outside doors show large transoms or windows above. It will not be necessary to arrange these windows as transoms; they are needed simply for the purpose of throwing plenty of light across the vestibule into the corridor.

The photograph (Pl. 5C) showing the front of the model will make the entrance doors clearer, and will also show the method of lighting the classrooms and the front part of the basement. The decorations in the upper parts of the windows opening into the classrooms are not essential to the beauty of the building. They represent little artistic touches which may be introduced if desire prompts. Unfortunately, the pillar on the right of the entrance as shown in the cut of the front of the model was out of plumb, and makes the model appear awkward. Attention should be called to the low, projecting roof, and especially to the extension of the roof over each entrance to the building.

The question might arise regarding the necessity of two entrances, one marked for the boys and the other for the girls. There is no need of limiting the boys to entrance at one point and the girls to another. However, there should be a door in the rear leading out toward the

playground, and since the basement on the girls' side is carefully protected, there is no reason why this door could not be used by both boys and girls, and the same is true of the front entrance.

If this building were located on a lot fronting east or west and if there were sufficient space to remove the building far enough from the roadway to avoid dust and disturbances, it would be entirely justifiable to face the broad side of the building toward the roadway, thus making the two entrances equidistant from the gateway leading from the street or roadway. In fact, this building is beautiful from any point of view and easily lends itself to proper orientation.

The height of the classrooms from finished floor to ceiling should not be over $12\frac{1}{2}$ feet, and the drawing shows the corridor 12 feet wide.

The cloakrooms are drawn 6 feet wide. The location of the doors into the cloakrooms can be seen by studying the cut showing the interior.

The model was designed by Cooper & Bailey, of Boston. The building can be constructed of any ordinary material, but is especially adapted to concrete or stucco. The model is painted white, and hence is shown in the photograph in this color. It would ordinarily blend better with the environment if it were a dull gray or, if constructed of wood, a rich brown. The color of the roof should be made to harmonize with the construction. A building following this plan could be constructed at a reasonable cost, for it demands no superabundance of material and is in every way simple in construction.

Model No. 6.

The floor plans and views of the model here introduced show an unusual type. The model represents a building having four classrooms, with a cloakroom attached to each; two separate excavations for basement, in which are rooms for toilets, baths, furnaces, and fuel; connecting pergolas; and an open-air theater or assembly room.

The accompanying drawing (fig. 10) of the basement plan shows that only half of the space covered by the two parts of the building is excavated and that the entrances to the basements open to the rear and outside of the building. Toilets are located in each case where they will be well lighted, and shower baths and dressing rooms are indicated in each side. The basement rooms are to be lighted from one side and the outer end. A chimney from each basement extends up through the connecting walls between the classrooms and emerges at the comb of the roof. The furnaces can be so placed as to make it easy to secure fresh air, and the ducts leading to the rooms above can be easily constructed. If instead of hot-air furnaces, hot water or low-pressure steam seems preferable, one boiler would be sufficient and the heat could be conveyed in carefully protected pipes underground.

from one building across the court to the other. This basement plan could be used only in communities furnished with running water and sewer connection or septic-tank disposal.

The floor plan represents four classrooms and a cloakroom at the outer end of each. These classrooms are 32 feet long and 24 feet

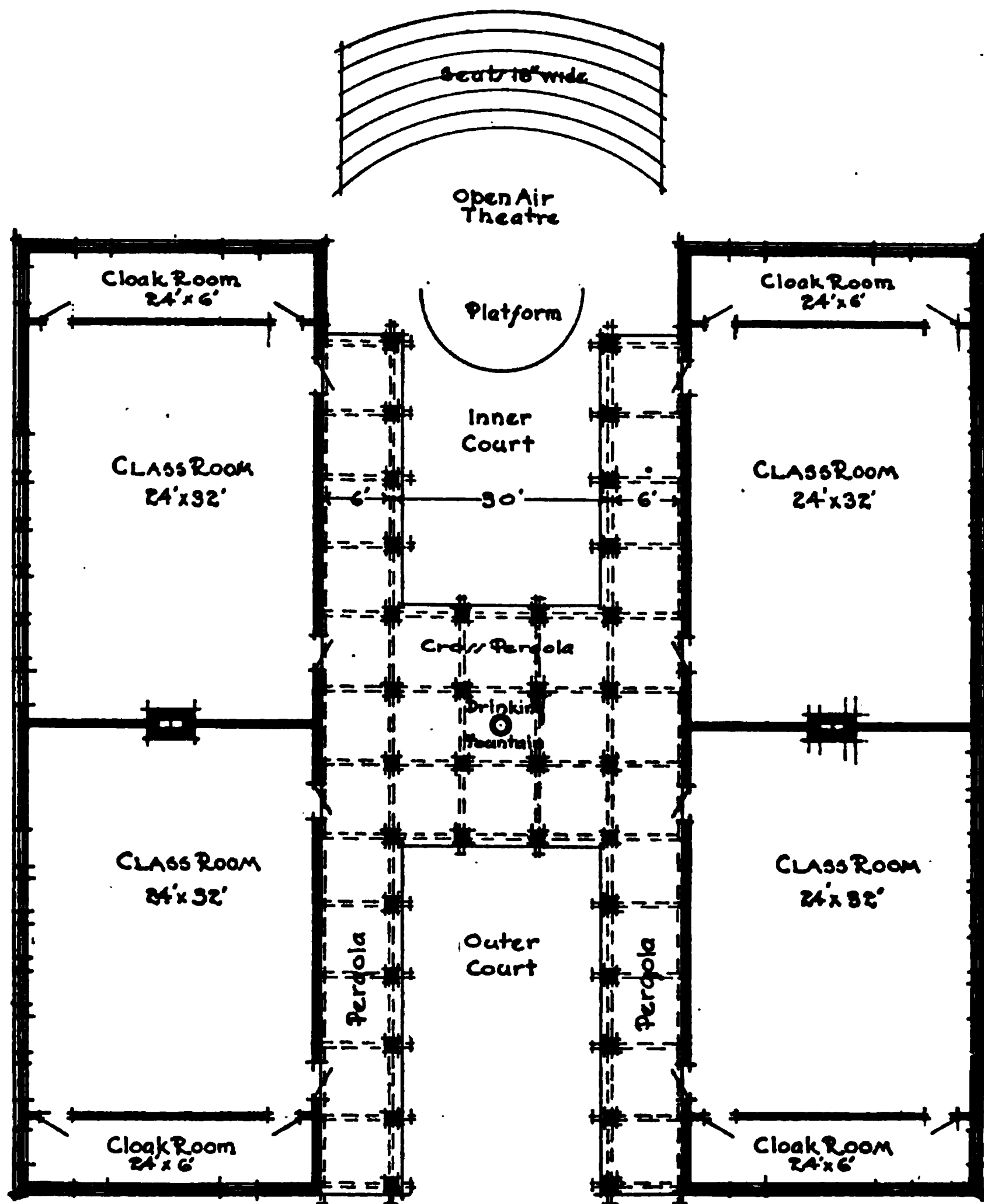


FIG. 9.—Main floor plan, Model 6.

wide. The cloakrooms are 6 feet wide and extend the entire width of each classroom. This makes it possible to introduce windows in the ends of the building for lighting the cloakrooms, thus relieving the architectural features of the building.

The unusual and interesting part of this building lies in the fact that no halls have been provided; their place is taken by pergolas,

connecting the two buildings and opening into the court. There is also shown a series of semicircular amphitheater seats for open-air classes and assemblies. This model was designed for the warmer parts of our country, and especially for those sections of the South and Southwest where the climate will permit much outdoor work. The building can be used not only for school work, but for social and educational purposes by the whole community.

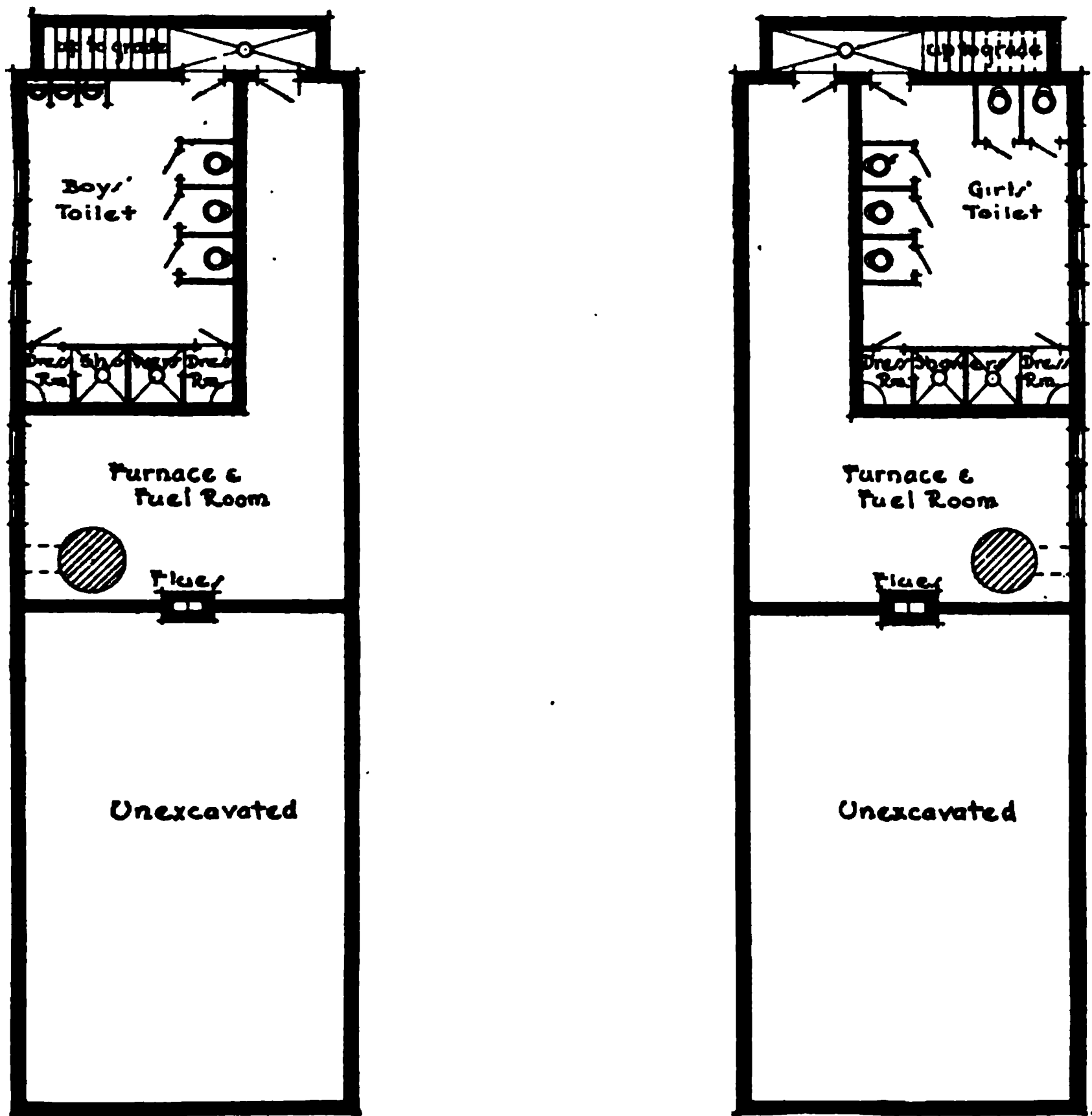


FIG. 10.—Basement plan, Model 6.

The building may face either north or south. In the warmer parts of the country it would be preferable for it to face north, so that an audience occupying the amphitheater seats in the rear would not have to face the sunshine. In the cold or windy parts of the country a good deal of protection could be secured if the building faced south. In no case should the building face east or west, because, if so placed, the classrooms could not be properly lighted.

The pergolas should be covered with vines, preferably grapevines or some hardy perennial, so that in time the whole structure would

not seem to be composed of two parts, but would be blended into a unit.

Two doors are shown in each classroom, one in the front and one in the rear end of each room. These open directly out beneath the pergolas and into the court. The width of the court, as shown in the drawing, is 30 feet. This will not separate the two parts of the building too far, and at the same time it will give sufficient room for the open-air theater and the court to accommodate not only the members but the patrons and friends of the school.

In order to get a little more clearly before the reader the idea in mind in drawing these plans, the following uses of this open-air theater are suggested: In the first place, all the children in the school could be gathered from their classrooms to these seats in a minute or two, because the children of each room could march separately and directly to the theater. Hence, in good weather, the morning's exercises for the whole school should be conducted here. Chorus work throughout the day, or regular classes from any of the rooms where blackboards are not necessary, could be conducted here. Entertainments of all kinds, weather permitting, could be given without any danger of disturbing the school building, and, above all, in the open air. The pergolas offer an excellent opportunity for simple decoration for evening entertainments; two or three dozen lighted Japanese lanterns hung from the beams of the pergolas would make a beautiful picture. The rear court could be used as a stage, and its convenience to cloakrooms and classrooms would easily suggest how these might be used as dressing rooms whence the actors could emerge without the need of curtains. Flowers, plants, and shrubs in this rear court could be arranged with the idea that the space is to be utilized for a speaker's platform, for a theater stage, or for the conductor of a chorus.

Neighborhood clubs, farmers' institutes, and all the social and educational gatherings of the neighborhood might utilize this open-air theater.

It will be evident to anyone considering the proper site for such a building that the amphitheater seats could be more easily and artistically placed if the building were situated with these seats resting against a hillside or a convenient mound about which were vines and shrubs and trees.

The upper tiers of seats in this amphitheater should be about 16 inches high, and the lower tiers should be adapted to the smaller children and be about 12 or 14 inches high. The width of the seat should be great enough to provide space just behind the back rest for the feet of those sitting immediately behind, and thus keep them from interfering with the backs of those sitting one step lower.

No one who has not felt the delight of such an auditorium as this can be expected to appreciate fully the pleasures and comforts it brings. In this auditorium questions of ventilation do not enter, and it would certainly emphasize in a striking way to all the people who might frequent it that there is far less danger of taking cold in the open air, when properly clothed, than in ill-ventilated rooms. Such an open-air "room" as this would be the most useful, the most delightful, and most educational place about the whole building.

The cross pergolas connecting the centers of the two buildings should be 12 feet wide at least, and a bubbling fountain should be erected at their center. The waste from this could be piped directly to a waste-water exit in one of the basements. A fountain located at this point would be easily accessible to all of the children and to anyone else attending exercises in the theater. If it should seem necessary to have more than one fountain, they could be arranged for at the same point.

The classrooms receive light from one side only, to the left of the children when seated at their desks. Each window is 3 feet wide, 8 feet high, and is set 4 feet above the floor. Instead of the ordinary sliding sash, casement windows should be supplied to this building, which would open directly out and be so hinged and guarded that they could be held at any point without danger of being broken by the wind. Plate 26B is inserted to show this window arrangement in one of the semiopen-air rooms of a Louisville school building. This type of window sash calls for special care in construction and arrangement, but can be imitated with success in a rural school.

This building would easily accommodate 140 to 160 pupils of the elementary grades and 100 of high-school grade.

Several serious omissions in rooms needed in such a building as this have doubtless occurred to the reader; no library, no workrooms, and no offices for the teachers have been planned. They have been purposely left out of this plan; not that they are not absolutely essential, but that they could be provided in separate buildings. This form of building permits of front extension without any serious disturbance to its unity. In drawing these plans without these several rooms the thing in mind has been the construction of four classrooms, with the accessories mentioned, at the very lowest possible cost. By referring to the photographs representing the model it will be seen that the hipped roofs of each half of the building are low, with wide eaves, and hence that all the walls are of the same height. If the building were constructed of wood, each piece of studding would be of the same length, provided the foundations were level. Altogether the construction is reduced to its simplest elements, especially as the expense of halls is entirely eliminated.

These plans are offered, not as perfect and complete models, but as hints toward greater utilization of the open air for classes, assemblies, and general social work.

The building should be located on ample ground, and the trees, shrubs, and gardening effects should be made to harmonize with the atmosphere of freedom and space suggested by the courts and the open-air theater.

Thanks are due Mr. William B. Ittner, of St. Louis, for the construction of the model on floor plans furnished him. The photographs do not give an adequate idea of the beauty of the model.

Plate 11A represents a one-teacher rural school in York County, S. C. The floor plan (fig. 11) shows a classroom 24 by 32 feet, a cloakroom 16 by 6 feet, a teacher's room 8 by 6 feet, and a workroom 12 by 24 feet. The open porch is plainly shown in the view. There are three outside doors, two leading into the classroom and one into the cloakroom. The windows of the classroom are well grouped on the left side of the pupils, and two windows open in the rear. The locations of the windows in the workroom and the teacher's room are shown in the floor plan.

This building, though it is far above the average, could be improved in the following ways:

A basement could easily be constructed beneath it. An examination of the photograph shows that the building is resting upon narrow brick piers.

A building like this 50 feet in length, if placed on high ground, or, preferably, ground sloping to the rear, would offer easy opportunity for installing in the basement a furnace which would heat the classroom, the workroom, and the teacher's room. The basement would offer abundant space for the installation of toilets and baths and a workroom for the boys, the workroom on the main floor being reserved for the girls. With this change there would be no reason for the rear door opening from the classroom; hence the space devoted to the cloakroom and the teacher's room could be lengthened 2 feet, the cloakroom shortened slightly, and the teacher's room could then be transformed into a library and teacher's room with more satisfactory dimensions.

The cloakroom would be safer and better lighted if a large window took the place of the door. Pupils would then have to enter the cloakroom from the classroom, thus giving the teacher complete control and preventing many annoyances.

The following drawing (fig. 12) represents a rearranged floor plan for this building. No change would be necessary except to introduce a window in the cloakroom instead of a door, to close the rear door from the classroom, and to widen the window in the library to 4 feet.

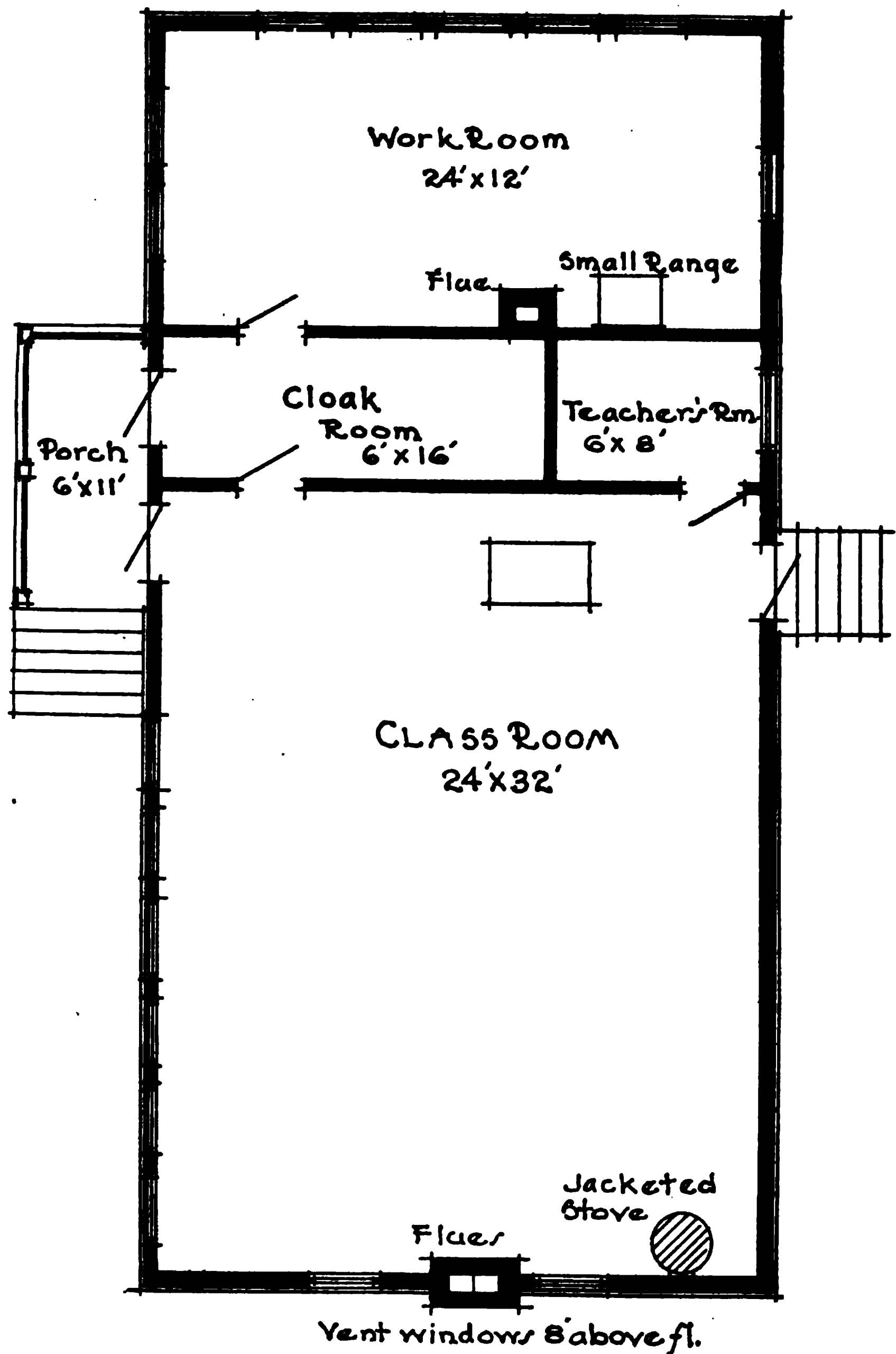


FIG. 11.—Floor plan, one-teacher rural school, York County, S. C.

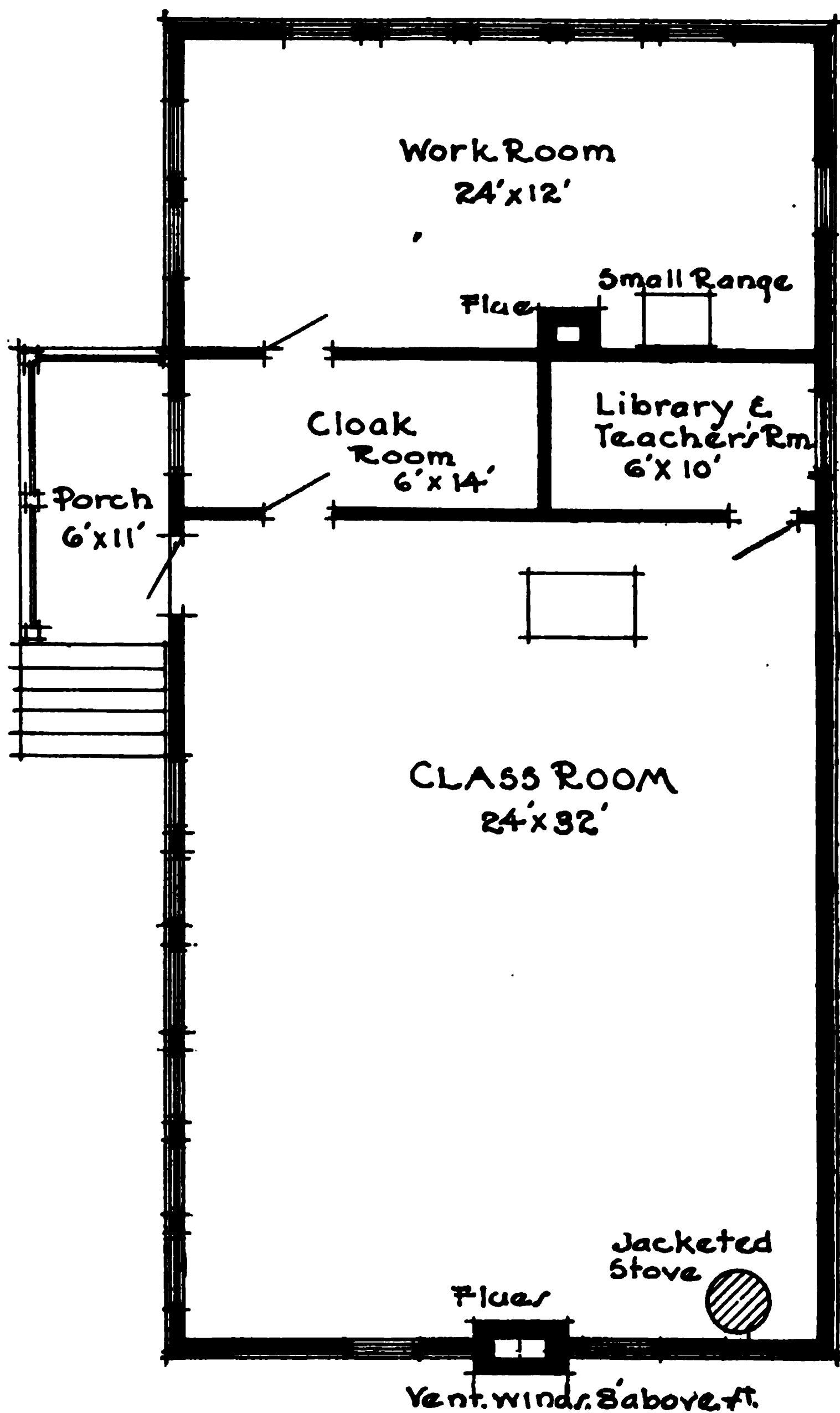


FIG. 12.—Rearranged floor plan of building shown in fig. 11.

Instead of the two windows in the rear being at the same height above the floor as those on the left of the pupils, they should be set at least 6 feet above the floor, so that the blackboard could extend across the rear end. These windows could then be used only for "breeze" in hot weather.

The original drawing shows a platform for the teacher set near the front door. The drawings for the floor plan show no platform, and the desk of the teacher is moved to the opposite side of the room. This is a better position, because the children's eyes are shielded from looking toward the windows when attending to the teacher, and the teacher's desk is out of the way of the children going to and from the cloakroom before and after school; further, it would give the teacher better position for managing the classes and better supervision over workroom, library, and cloakroom.

Some objection might be offered to the length of this building in comparison with its width, and were it not for the simple but rather graceful porch, this objection would carry more weight. As it is, the building does not look out of proportion and shows good lines.

Figure 13 and Plate 40A represent the floor plans and an outside view of a one-teacher rural school designed by J. H. Felt & Co., architects, Kansas City, Mo.¹ These plans anticipate either the construction of a new building or the remodeling of an old building. For example, if an old building in the form of a classroom without any of the conveniences attached were enlarged by adding the hall with its attached cloak racks, the workroom, the niche for the heater, and the various other elements in the front of the building, by rearranging the windows, and changing the doors, it would be an easy matter to make over an insanitary and inconvenient one-room building into this hygienic and modern structure.

There are certain features of this building worthy of attention: The niche in which the heater is placed could be made fireproof at little expense. The fuel need not be carried into the house. The exits for the foul air are brought into contact with the chimney, and in this way the movement of the air is hastened. The workroom is shown with folding doors between it and the main schoolroom. These doors may be left open, or they may be closed in case the work within this room disturbs the pupils in the classroom. A blackboard may be placed under the high windows in the rear, as well as on the wall in the front of the schoolroom. Further, if the windows on the right side of the workroom were placed higher, say 7 feet above the floor, a blackboard could be introduced across the entire end of this room, which would seem desirable. If the windows on the left of the classroom were all moved back nearer the left rear corner, as the children sit at

¹ Thanks are due the architects for the use of this revised floor plan and the photograph of the building.

their desks, better light would be obtained, because less of it would be in the children's eyes.

This plan could be improved somewhat by slight reconstruction, the result of which should be a building with a single workroom for all, one cloakroom, a teacher's room, a library, and a classroom.

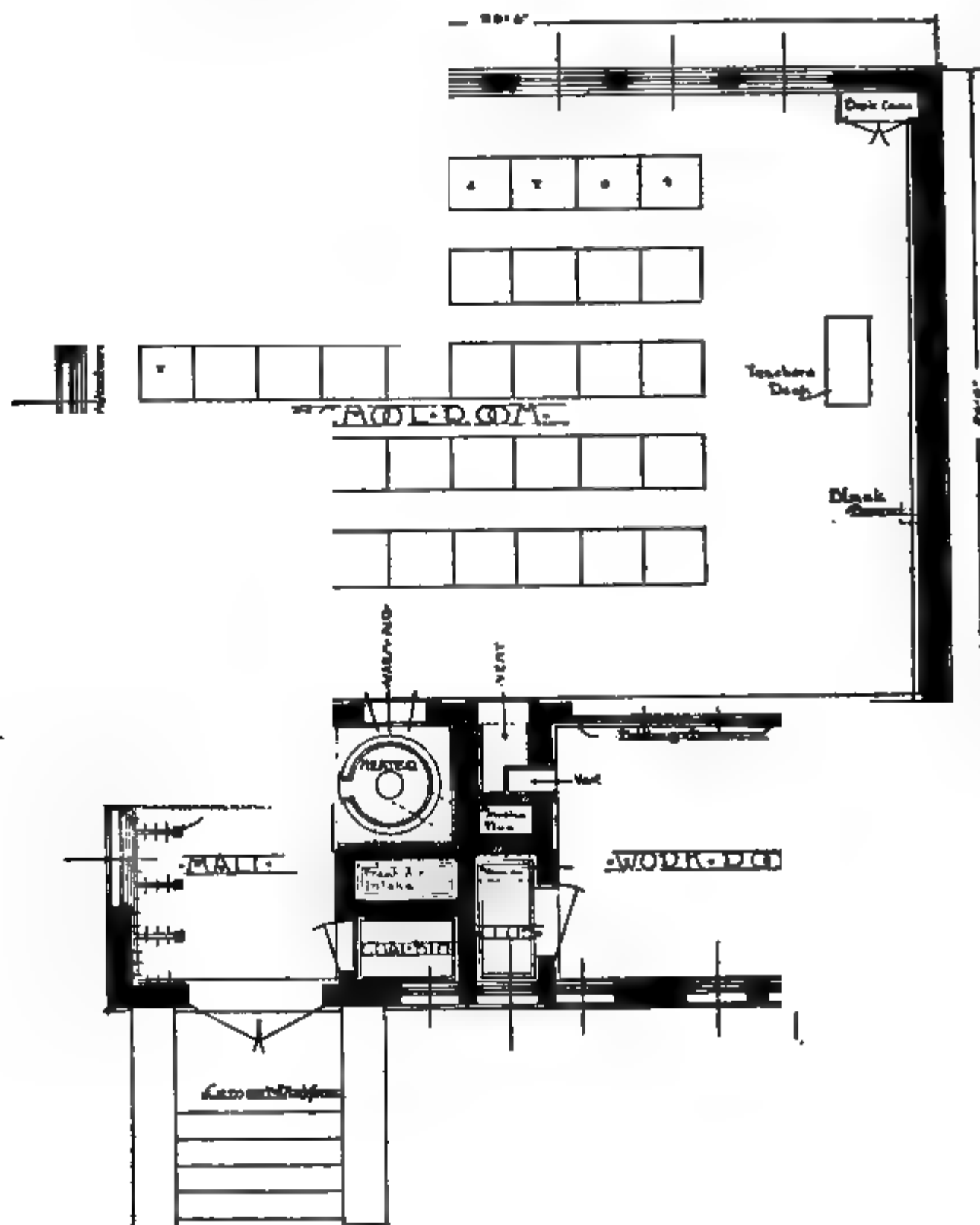


FIG. 13.—Floor plan of model one-room school, showing seat room. J. H. Felt & Co., Kansas City, Mo., architects.

If a basement could be constructed under this building, it could be used for the furnace and such other conveniences as community conditions would warrant. Without a basement a jacketed stove could be set as indicated. A separate flue should be constructed in the workroom to furnish opportunity to use a small range for domestic

science work. If it seemed best to separate the workroom into two parts, a partition could be erected between the door and the flue in the workroom.

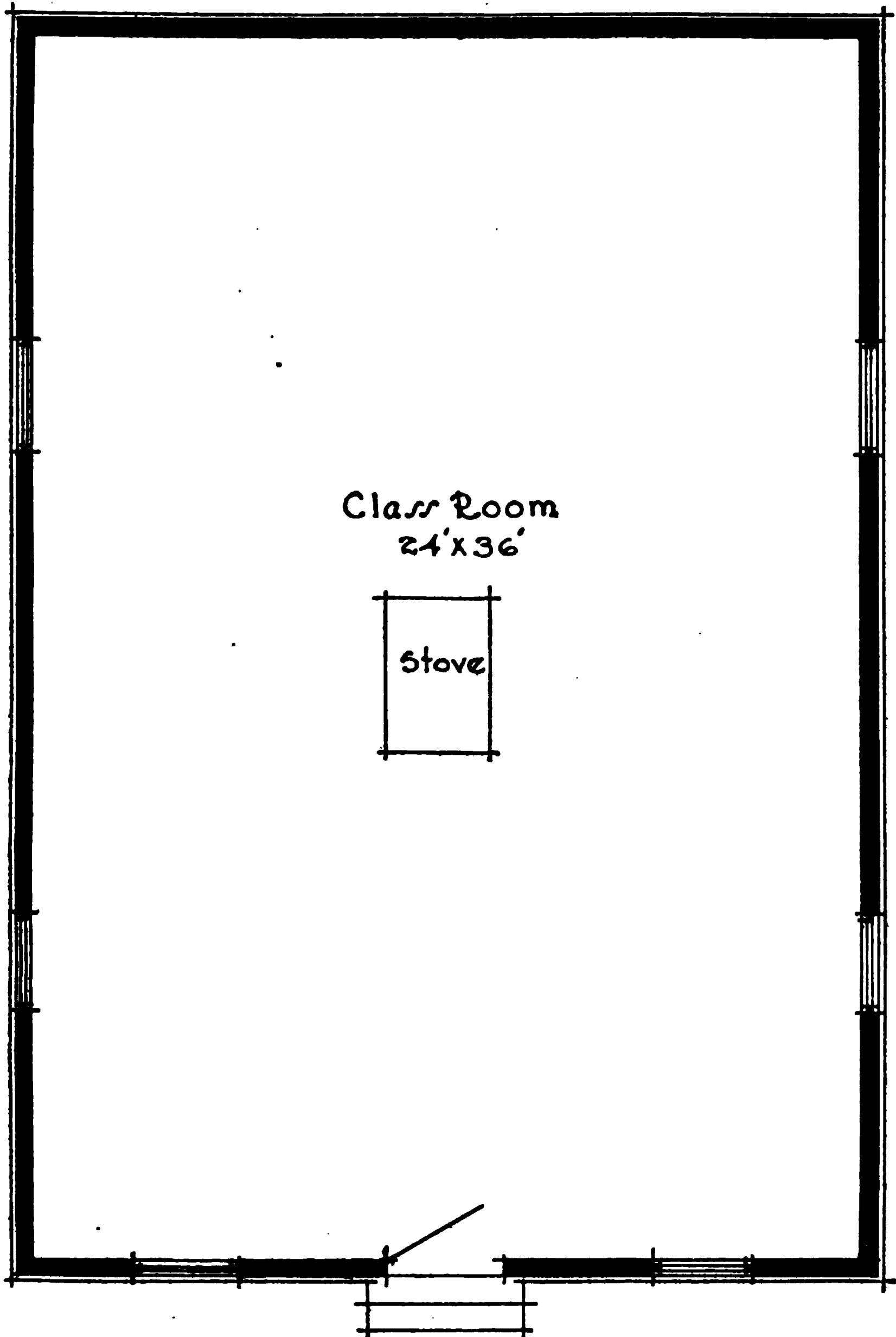


FIG. 14.—Floor plan of a typical old school building (see also p. 115).

Figures 15 and 16 show a building that is not a one-room building, but a one-teacher building.¹ It is really a five-room building. There

¹ Drawn by Hobart & Cheney, architects, San Francisco.

is a splendid workroom, beautifully lighted, with provision for a small range for work in cookery. This workroom is 7 feet wide and approximately 21 feet long and will accommodate all the older boys and girls of the ordinary rural school. The uses to which this room can be put will be limited largely by the ability and foresight of the

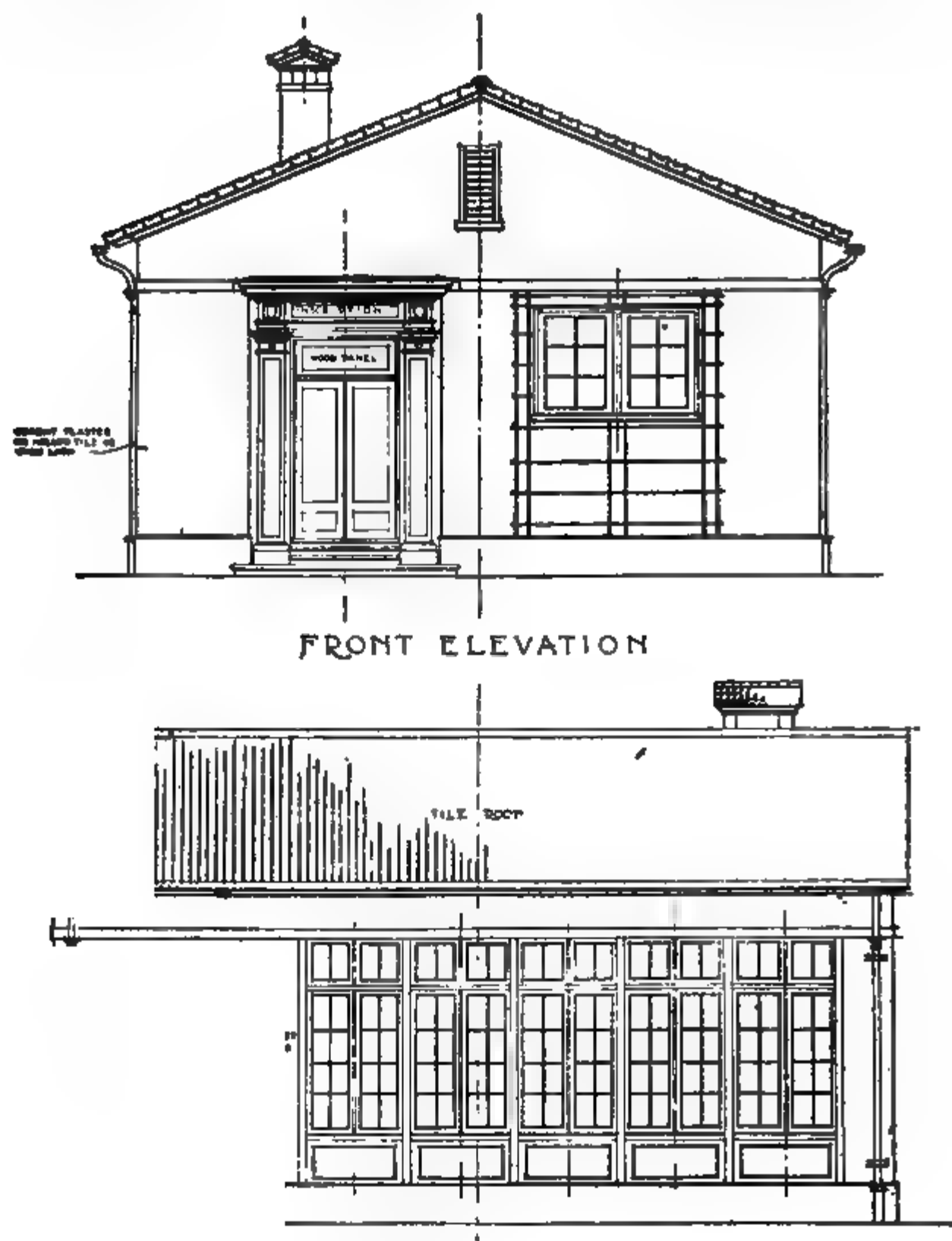


FIG. 15.—Front and side elevation, one-room school, Hobart & Cheney, Architects, San Francisco, Cal.

teacher in charge. Manual training in wood work, all sorts of drawing work; model making for farm barns, farmhouses, and outbuildings; studying germination of seeds and growth of plants; cooking; designing; cutting; sewing; and all other kinds of work relating to home life and school life may be done in this workroom if the teacher has vision and power to outline and direct the work.

The library room should have more light than is here shown. There should be two windows instead of one. These placed (as indicated for the one shown) 6 feet above the floor will permit bookcases beneath and give good light and sunshine.

The two cloakrooms are well situated, and although some objection might be raised to the fact that the teacher's blackboard has

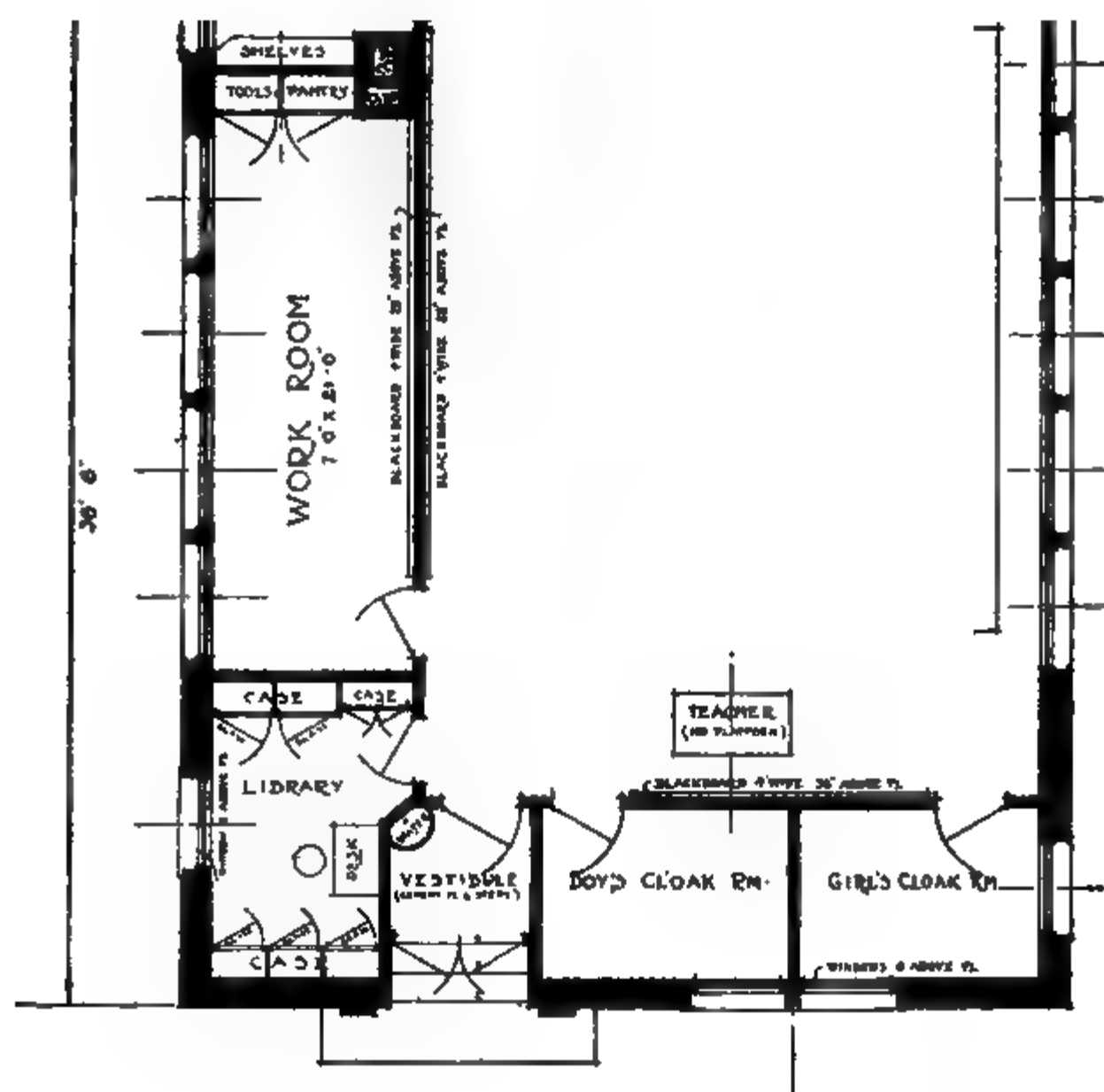


FIG. 16.—Floor plan of one-room school, Hobart & Cheney, Architects, San Francisco, Cal.

been shortened by the doors into these rooms, it is still long enough, especially if it is made 4 feet wide, as it should be.

The windows of the classroom are grouped on the left. Two high windows in the rear (8 feet above the floor) and those in workroom and library may be used to secure a breeze through the room in hot weather. The cloakrooms can be ventilated through their own windows.

If a basement were properly constructed under this building and running water, with the necessary sewage disposal, were available, sanitary toilets and baths could be installed; a furnace also could be used instead of the jacketed stove suggested in this plan. If a furnace is installed, inlets should be set to heat the classroom, the workroom, and the library, which should open from the inner walls about 8 feet above the floor, and the outlets should be near-by at the floor line. The furnace would enable the small room shown in the drawing as fuel room to be thrown into the workroom; or better still, the partition and chimney could be moved farther to the front, and two workrooms, one for the boys and one for the girls, be made.

By studying these drawings it will be seen that the plans contemplate a construction with cement plaster either of fireproof tile or of framed and galvanized steel lath and a tile roof. But the form of this building lends itself to almost any kind of durable material.

The building will accommodate 35 to 40 pupils without crowding.

Should the hinged form of windows shown not be available in the local markets, the ordinary sliding sash can be used. The windows should be set 4 feet above the floor. When the upper parts of the windows are stationary, as here shown, ventilation is not so easily effected; when arranged as transoms, they are out of reach and generally useless. The hinged form of windows here called for will make it possible to turn this classroom into an open-air room by merely swinging all of the windows out. In larger buildings, where forced ventilation is used, the horizontal division of windows is less objectionable.

This plan can be easily adapted so as to make a splendid one-teacher rural school.

Plates 21, 22, 23 are reproductions of photographs of the Crossroads School in Macon County, Ill. The bureau is under obligation to State Supt. Francis G. Blair and the State printer of Illinois for the use of the photographs from which these cuts were made.

The building was designed by Mr. V. C. Zimmerman, of Chicago. It represents an unusually good type of country school and is worthy of careful study by school officers who can afford to construct a building of this size and equip it as indicated. Some features of this school deserve especial attention.

In the first place, from plate 21 and other views one can see that the windows are closely grouped and occupy almost the entire east side of the building. By reference to plate 23B it will be seen that the windows do not extend to the ceiling by about 2 feet. If the front one of these seven windows had been eliminated and the rest of the windows had been set higher from the floor, say 4 feet, and had extended within at least 1 foot of the ceiling, better lighting conditions would have prevailed, for the light then would have carried across the room better and have been better adjusted to

the eyes of the pupils when seated at their desks. If the windows had been set as thus suggested, ample glass surface would have been afforded, yet the disturbance due to the light from the front window shining directly into the eyes of some of the children as they attend to the teacher would have been largely eliminated. On the whole the lighting of this building is unusually good, but it would have been more satisfactory if the windows had been arranged as suggested. The narrow mullions between the windows are very commendable and the whole appearance of the elevation is pleasing.

Plate 22B, representing the interior, shows a good arrangement of the desks with one row close to the windows. This gives ample aisle space and serves to introduce without appreciable crowding six rows of desks. But if the lower part of the windows had been placed higher above the floor, there would have been less exposure to the cold on the part of the children who sit on the benches close to the windows.

Plate 23B shows small rear windows which can be used for ventilation in hot weather. They can be easily covered with a shade during the cold winter months when there will be no need for opening them. It is rather unfortunate that no blackboard appears on the side opposite the windows and that the blackboards are placed only in the rear and in the front. There are two spaces on the west side wall that could have been used very satisfactorily for board work by the pupils and that would have made it easier for all to see. However, these are minor points of no great significance. It is evident the blackboards are made of slate and well set. It may be suggested that the teacher's desk should be placed on the west side of the room instead of on the east, as indicated in figure 17. This would prevent those children sitting in the northwest part of the room from having to look toward the windows when attending to the teacher while seated at her desk.

It will be observed that transoms are placed above all the doors. Elsewhere it has been said that transoms in schoolhouses of this type, and for that matter in practically all types, are a delusion and a snare. They are rarely used, nearly always dirty, and generally out of order. In one of these photographs, however, it appears that two of the transoms are open, and the teacher in this school may be able to use them to some advantage.

The warm-air registers in the floor warm the pupils' feet and dry their clothes, but they also introduce a great deal of dirt and dust which falls into them, and after drying rises in the room to settle on furniture and on all ledges. It would have been better if these registers had been placed in the wall 8 feet above the floor, and if some special provision had been made in a convenient and out of

the way place in the room for a fixed bench with a register opening in front for the purpose of warming the children's feet and drying their clothes.

The architect has introduced the usual tower. The building, however, would have been more beautiful if this tower had been left off, the roof would have been more secure from rain, and considerable expense would have been saved. Evidently this tower was built chiefly to accommodate the flagpole. It is better in all places where there is sufficient room, as there is at this building, to put a flagpole in the ground, and thereby make the flag much more

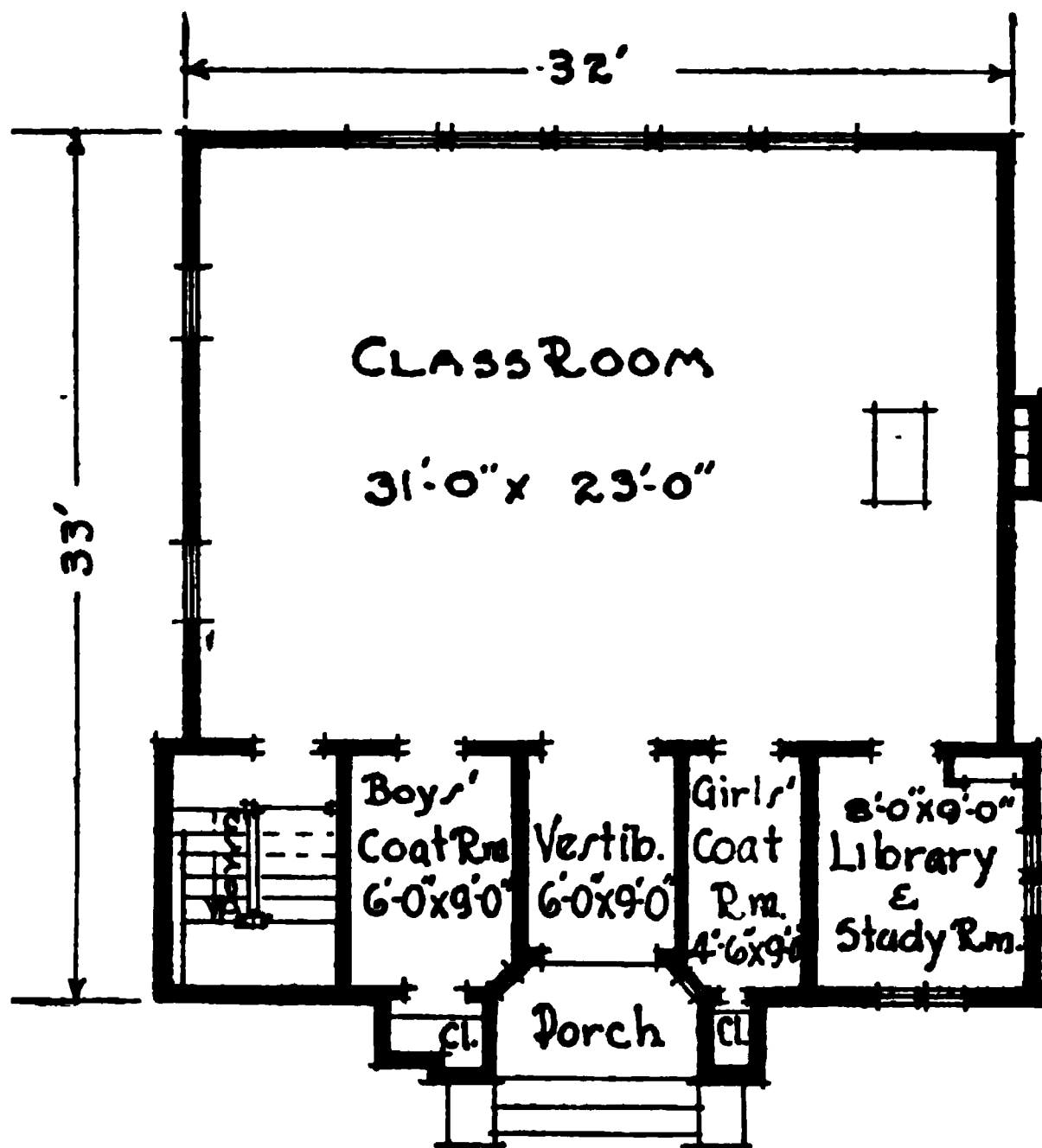


FIG. 17.—Floor plan, Crossroads School, Macon Co., Ill.

visible. The children can then practice flag drills and salute the flag with much greater intimacy than they can when it is far out of reach and more or less out of sight on the top of the building.

The basement and floor plans reproduced are worthy of study in connection with the photographs. The whole space under the building has been excavated and furnishes a furnace room, a coal room, a stairway to the basement, and a large well-lighted room for play and work. It is to be regretted that somewhere in this splendid building provision was not made for interior flush toilets and bathing facilities. The use of the basement for playroom and workshop is a splendid idea, but in the climate of Illinois outside

toilets often necessitate the exposure of the children to inclement and cold weather in winter. The building deserves a septic-tank disposal and a pressure-tank water supply, which would have made possible flush toilets, drinking fountains, and shower baths. In the plan of the basement area spaces are introduced about the windows so as to allow larger windows, and thereby get more light into the basement rooms.

The floor plan of the building shows a cloakroom for the boys and one for the girls, a library, and a vestibule. Evidently when the building was constructed two more windows were added to the

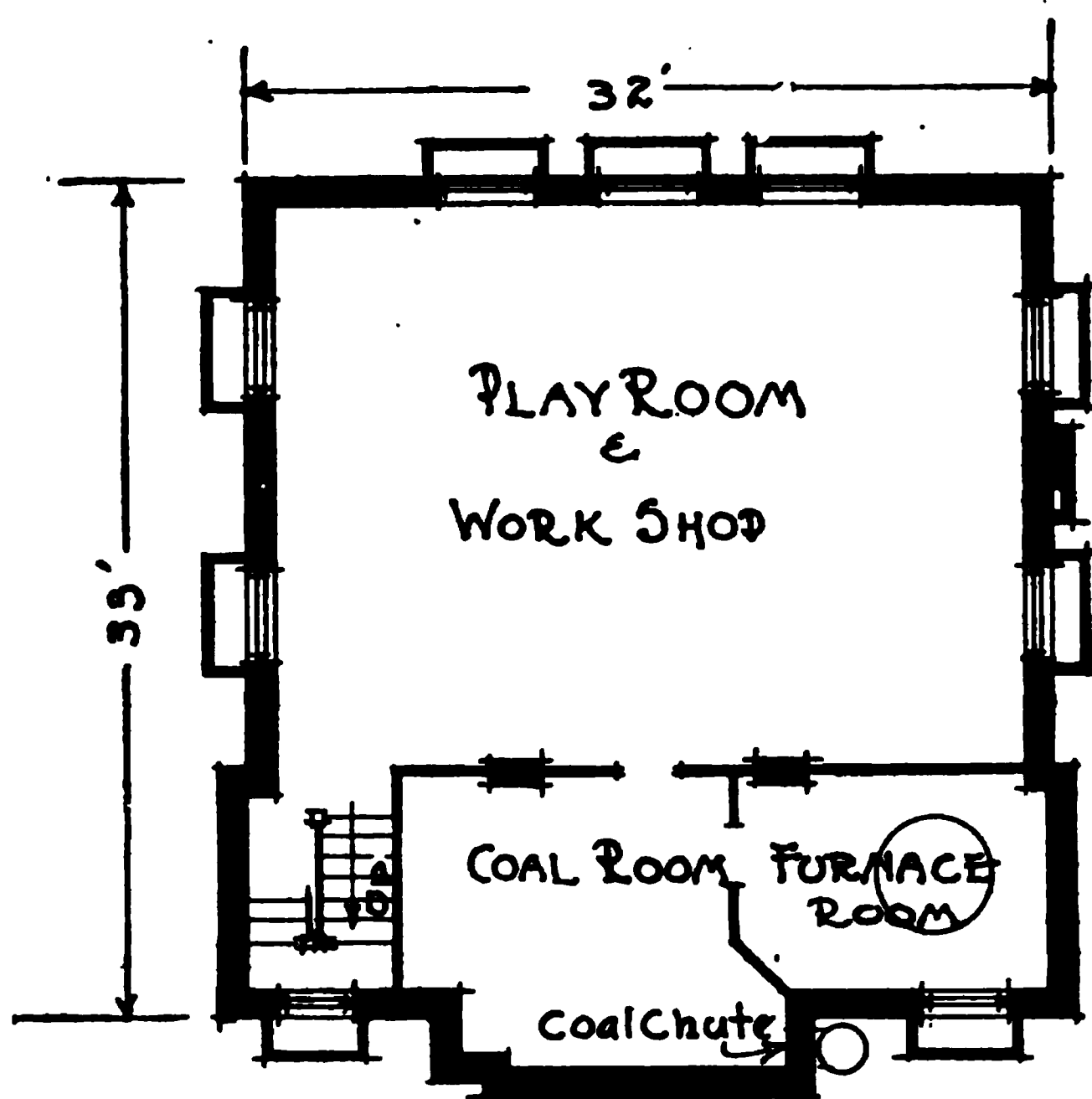


FIG. 18.—Basement plan, Crossroads School, Macon Co., Ill.

east side of the classroom than are shown in the floor plans. It is more than probable that if the five windows shown in the floor plan had been made higher and moved slightly to the rear better lighting would have resulted than now obtains.

The various suggestions herein made must be understood as suggestions, not as criticisms, for this building is unusually attractive and carefully planned, and is to be commended to all who are interested in the construction of a high type of country-school building.

Plate 24 represents an attractive one-teacher rural schoolhouse in district No. 9, Canandaigua, Ontario County, N. Y., and also

the abandoned building which this new building displaced.¹ The floor plan, as will be seen (fig. 19), shows the classroom 24 feet long and 21 feet wide, large enough to accommodate about 25 or 30 pupils of such ages as attend country schools.

The orientation of the building is such as to secure effective lighting from the four windows facing the east. Two full-length windows are placed in the rear on the north. These would be valuable in hot weather, but for the purpose of lighting they are more troublesome than helpful. They must introduce some trying shadows to workers in the rear of the room, and will certainly make it very hard

OTTO BLOCK ARCHITECT
ROCHESTER, N. Y.

FIG. 19.—Floor plan of No. 9, Canandaigua, N. Y.

on the eyes of the teacher, who must face them whenever she is in the front of the room. It would have been better if these windows had been only half length, with the bottoms 8 feet above the floor. The children then would have been more carefully shielded in winter from the cold winds entering about the sash; the troublesome shadows would have been largely eliminated; opportunity for a breeze would still be afforded; and most certainly the teacher would have been relieved. In addition, blackboards could have been set on this wall under such windows, if additional blackboards should ever be needed.

¹ Used by courtesy of Miss Alice G. McCloskey, editor of the Cornell Rural School Leaflet (see vol. 6, No. 1, p. 175, September, 1912).

The height of the lower sash above the floor and the proximity of the tops of the windows to the ceiling are not apparent, but the grouping of the lateral windows is good, and this small room can be well lighted from the four windows, if the shades are handled intelligently. The interior decoration of the room is tasteful, and the placing of the blackboards excellent. The color scheme used is as follows: The ceiling and the side walls as far down as the picture molding are cream color; the main part of the room is pale green; the library is terra cotta; the fireplace in the library is red pressed brick.

The library, with the sliding doors, fireplace, and furniture, is especially attractive and is, no doubt, the most alluring place in the building to the older pupils and the patrons of the school. The rather unique lobby, the stairways to the basement, and the simple attractive porch are all commendable.

In the drawing the hot-air register is apparently shown opening through the floor. In practice this might become decidedly objectionable. The dirt and dust from the floor would certainly enter such a register and be scattered through the room by the upward movement of the currents of warm air. The proper place for this register is in the central part of the wall between the library and the classroom. This position would not only prevent a great loss of heat through the use of a long duct in the basement (it is assumed that the one chimney serves both the fireplace and the heater), but would prevent the warmed fresh air from short-circuiting over the heads of the children and going directly out at the exit and the fireplace. This would certainly happen if the register is located as shown in the floor plan.

One excellent feature of this building is its simplicity. There are no towers or excrescences of any sort. A country carpenter can build it at a minimum expense for lumber and millwork.

The tasteful treatment of the garden is especially to be commended. There is a hedge of Lombardy poplars forming both a pleasing background and a windbreak on the west. In addition to these, there are 9 elms, 1 white pine, 8 Norway maples, 1 Norway spruce, 3 hemlocks, 1 English walnut, 24 dogwoods, 1 shrub of white honeysuckle, 24 shrubs of spirea, 24 Dorothy Perkins rosebushes, and 24 shrubs of barberry. These names are cited to show what can be done to beautify and instruct in nature work on a school lot of 1 acre.

The spirit that made the Canandaigua school possible is indicated in the following statement by Mr. Booth, the district superintendent:

My reason for the work in district No. 9, Canandaigua, was that the schoolhouse and its grounds were the most neglected places in the neighborhood. A beautiful lake-shore drive passing homes with all modern improvements, which were a pleasure to look on, presented in marked contrast the place in which boys and girls, the best assets from these homes, were receiving their education. The schoolhouse was built

in 1819, the deed calling for no more ground than that on which the building was to stand. The outhouses were on land that belonged to the public highway.

At the time I took up the work, many of the school patrons felt that the wisest plan was to close the school and send the pupils to town. I do not believe in this method when it is possible to avoid it. I believe that children are better cared for near their homes than when they go to and from school in a carryall, with an indifferent driver and no supervision; remaining in town all day, where, in order to maintain order and a fair citizenship, we must have churches, Y. M. C. A.'s, and a police force.

Very often the reason for closing the rural school and sending children to town is because it is cheaper and the patrons are not willing to assume the duties of the school and dignify those duties by their interest and cooperation. In our district to-day I am happy to say that we are hearing little of the closing of rural schools.

One of the first things I did was to ask Mr. F. G. Benham, who owned the farm of which the school lot was a part, to give us an acre of land. This was at once granted on condition that I could carry out the plan of improvement. I then appealed to the citizens of the village who enjoy the lake drive for help in the enterprise, and received \$300. A meeting of the taxpayers was next called, at which a resolution accepting the money and land was passed and a levy of \$2,000 made. Then, with the united efforts of school commission and people, we accomplished the election of a trustee in sympathy with the work we were trying to perform.

With the gift of land and money, and \$2,000 of the district money, we went to work. We had an engineer of good standing to lay out the grounds, and I think this was a most important step. We next engaged a good architect, who said at once that our plans could not be carried out with the amount of money we had. I told him that I was raised on a farm and never lifted a stone when I could roll one, and I believed we could do it. I proceeded, however, to get more interest and help. The workmen entered into the spirit of the thing, working hard and overtime and deducting a goodly amount from their bills. By the end of the year all was finished and paid for.

But this is not all. Later there was donated to the school a swing, which is a beginning in the interest of recreation apparatus for the boys and girls. We then remembered that we had a friend in the gas and oil business. I asked him if he would like to have the honor of presenting us with a steel flagpole. As a demonstration of his response, we now have a flag flying from a 40-foot steel pole set in concrete. There are many persons who like to do things if they have definite understanding of the need and value of their contributions.

We are now planning for an endowment fund, the interest of which will be used for the care and improvement of the school grounds, the district to look out for the building. The raising of an endowment fund is valuable for the community. It means looking ahead, a consideration of the future.

The following reproductions of photographs of the Silas Willard School, of Galesburg, Ill., are worthy of study by those who are considering consolidation and are seeking the best type of consolidated rural or village school. Some of the features in this school deserve special attention.

In the first place, the classrooms are provided with skylighting as well as with supplemental side lighting. By reference to plate 34, and their effect this type of lighting will be clearly seen. The question whether skylights such as these are necessary or even helpful in this type of school building can not be answered without making certain reservations. There are conditions, in smoky cities

and in localities with much dark, cloudy weather, where skylights are helpful, particularly in one-story buildings. Generally speaking, however, if buildings are properly orientated and if the requisite amount of glass surface is correctly set in the walls, unilateral lighting is to be preferred for classrooms not over 24 feet wide to any combination of sky and lateral lighting.

There can be no doubt, however, that the windows shown in the rear of these classrooms could either have been left out to advantage or have been made half length and set at least 8 feet above the floor. They certainly are not needed for light, and if on warm days a breeze

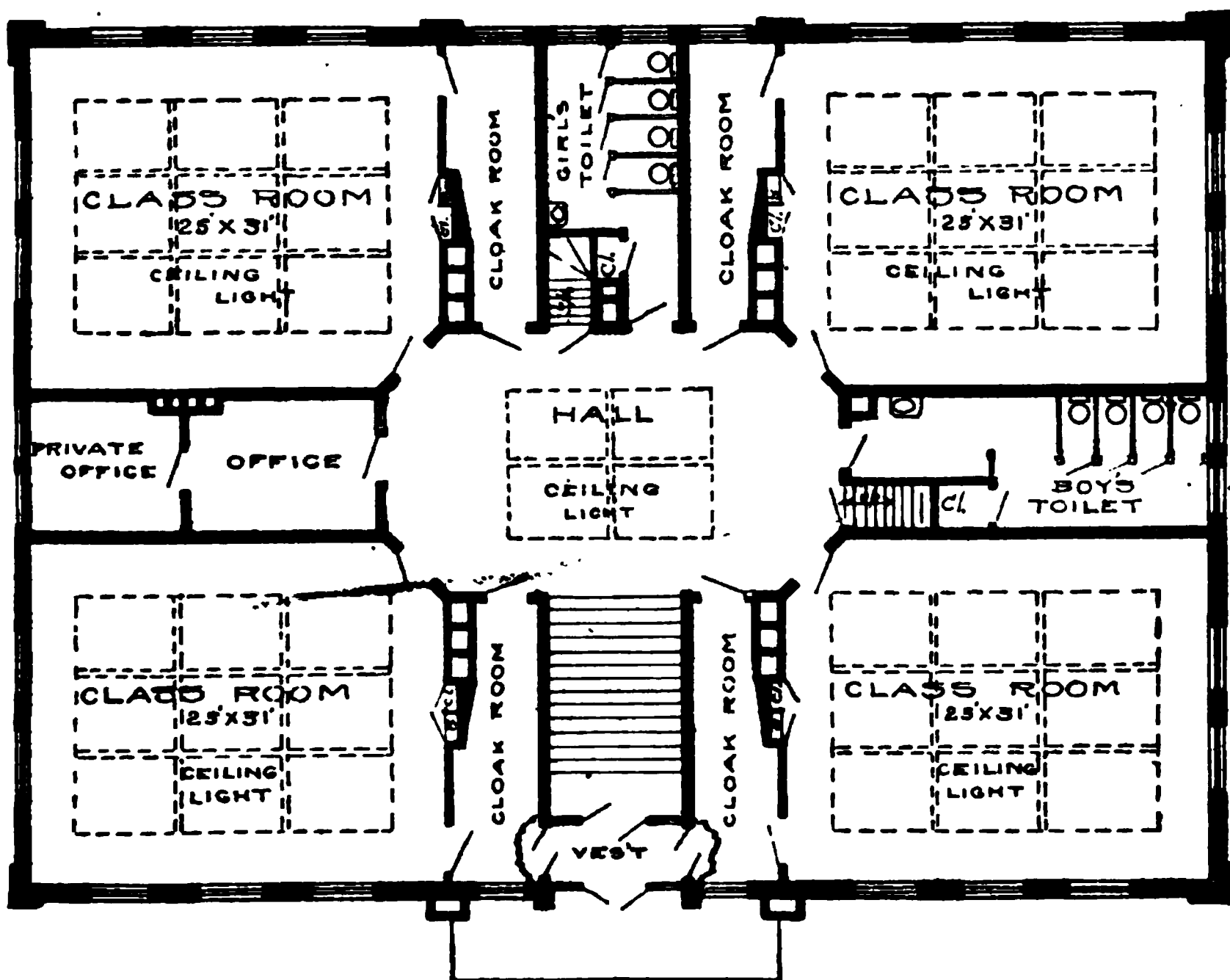


FIG. 20.—Main floor plan, Silas Willard School.

is desirable the small high windows would serve this purpose without exposing the teacher to the glare of these low windows.

These beautiful classrooms could be well lighted by setting in the walls to the left of the pupils one-fifth as much glass surface as there is floor space, provided the windows were set 4 feet above the floor and were extended to at least 6 inches from the ceiling, thus throwing the light well across the room. Close examination of the interior views will show that skylighting does not give as good illumination on the blackboard as on the desks and the floor. This is not a serious objection for classrooms designed for the upper grades, but it needs to be pointed out. It should be said that the light introduced by these skylights is diffused north light and is very soft.

Another special feature of this excellent building is the well-lighted and commodious basement, designed to be used for assembly and for general community gatherings. It has a stage and an excellent floor for dancing, drills, gymnastic work, etc. A basement is not the best place for an assembly room, but often it is necessary, through lack of funds, to attempt to meet the demands for an assembly room in the next best way. This basement room, as will be observed, is not more than $3\frac{1}{2}$ feet below the level of the ground; and as the building is situated on ground higher than the surrounding territory the room can be so underdrained as to render it dry and wholesome. The basement walls can be built of concrete and either finished to a

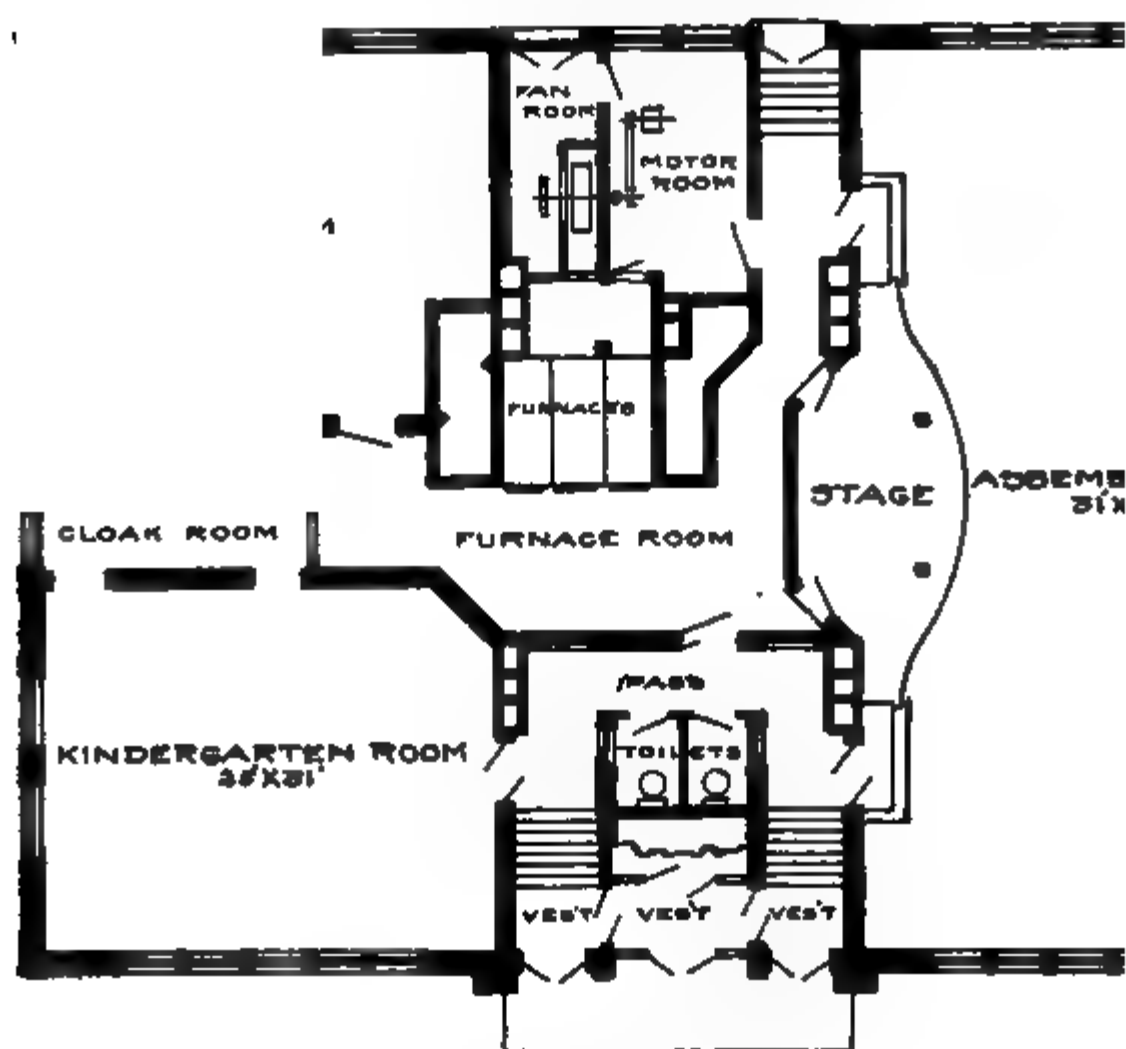


FIG. 21.—Basement plan, Silas Willard School.

smooth surface or faced with light glazed brick or tile. This would improve the illumination and make the room more sanitary.

The arrangement and treatment of the hall deserve a few words of explanation. By reference to Plate 35A it will be seen that all of the rooms open off this one central hall. The skylight gives the hall beautiful illumination without the use of any auxiliary outside windows. The only objection to this arrangement is that the toilets are rather too conspicuous. This objection could be readily obviated in future buildings of this type.

Workrooms and baths are supplied, and a central hot-air and fan system furnishes heat and ventilation. The transoms over the

doors and the glass in the doors could have been left out to advantage and with economy.

Taken all in all, the building is excellent and beautifully simple in construction. It has been introduced for the consideration of those, as mentioned above, who are charged with the construction of small country high schools, consolidated country schools, or village elementary schools.

The interesting school building represented by the accompanying reproductions of photographs and floor plans¹ is in use at Coconut Grove, Fla. It is representative of a new type for the South and is worthy the study of all school people who are charged with building

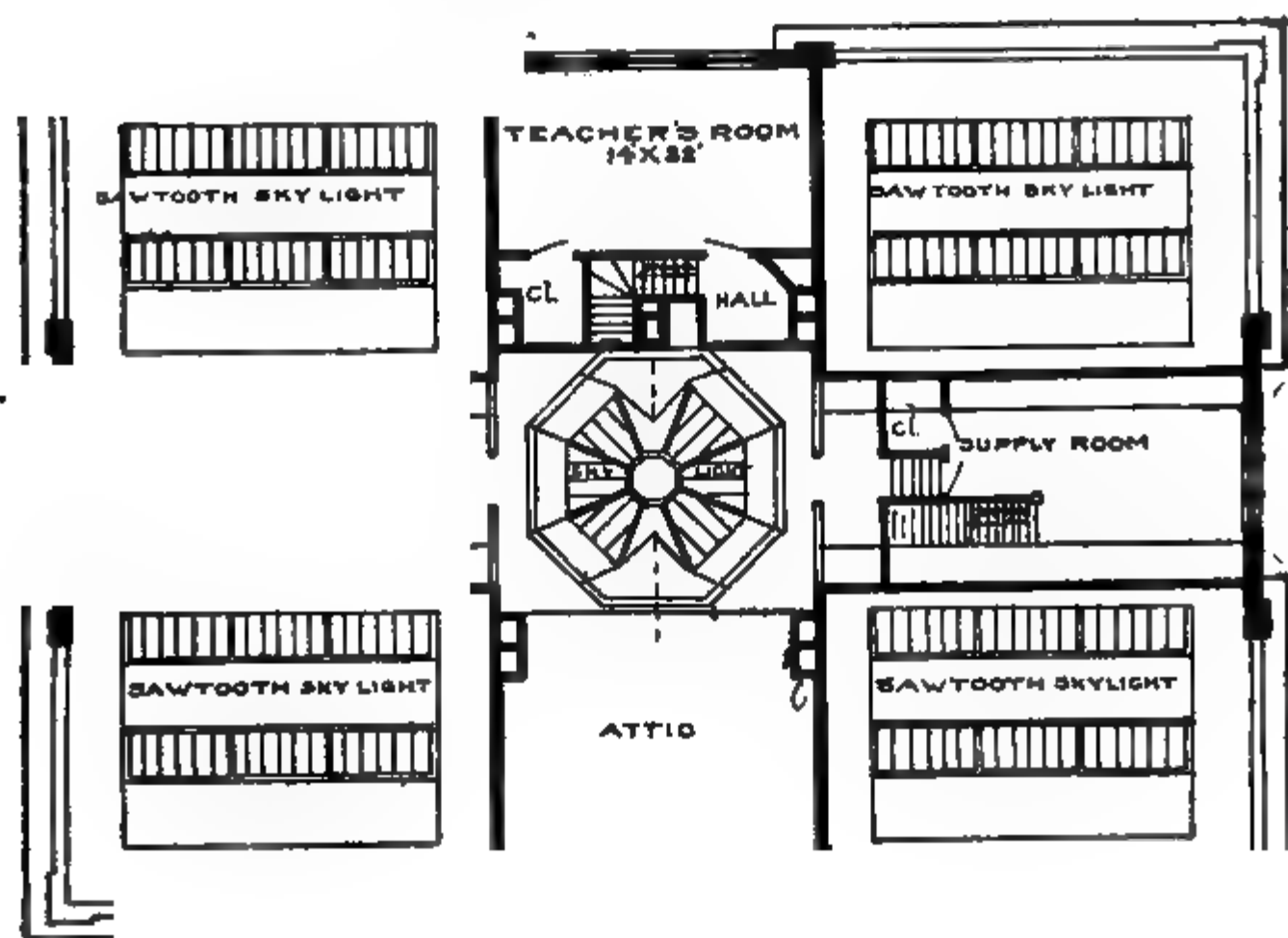


FIG. 22.—Attic and roof plan, Silas Willard School.

village schools, country high schools, or consolidated country schools. It is especially adapted to conditions where the population is increasing and where additions are anticipated, for additions can be added at a minimum of expense and with practically no disturbance to the original building. This is a desideratum of no small moment. For example, the country consolidated schools and the country high schools are still somewhat in the experimental stage, especially with reference to the number of pupils they will ultimately accommodate. This form of building permits additions to meet the needs and without doing any violence to the architectural ideal set forth in the first units. It thus warrants the use of permanent materials, such as concrete or stone, and, hence, in the long run will prove economical.

¹ Plate 12; figure 23.

The one-story court and pergola form of structure eliminates the need for stairways and halls and reduces congestion and noise to a minimum. In warm climates where little or no artificial heat is

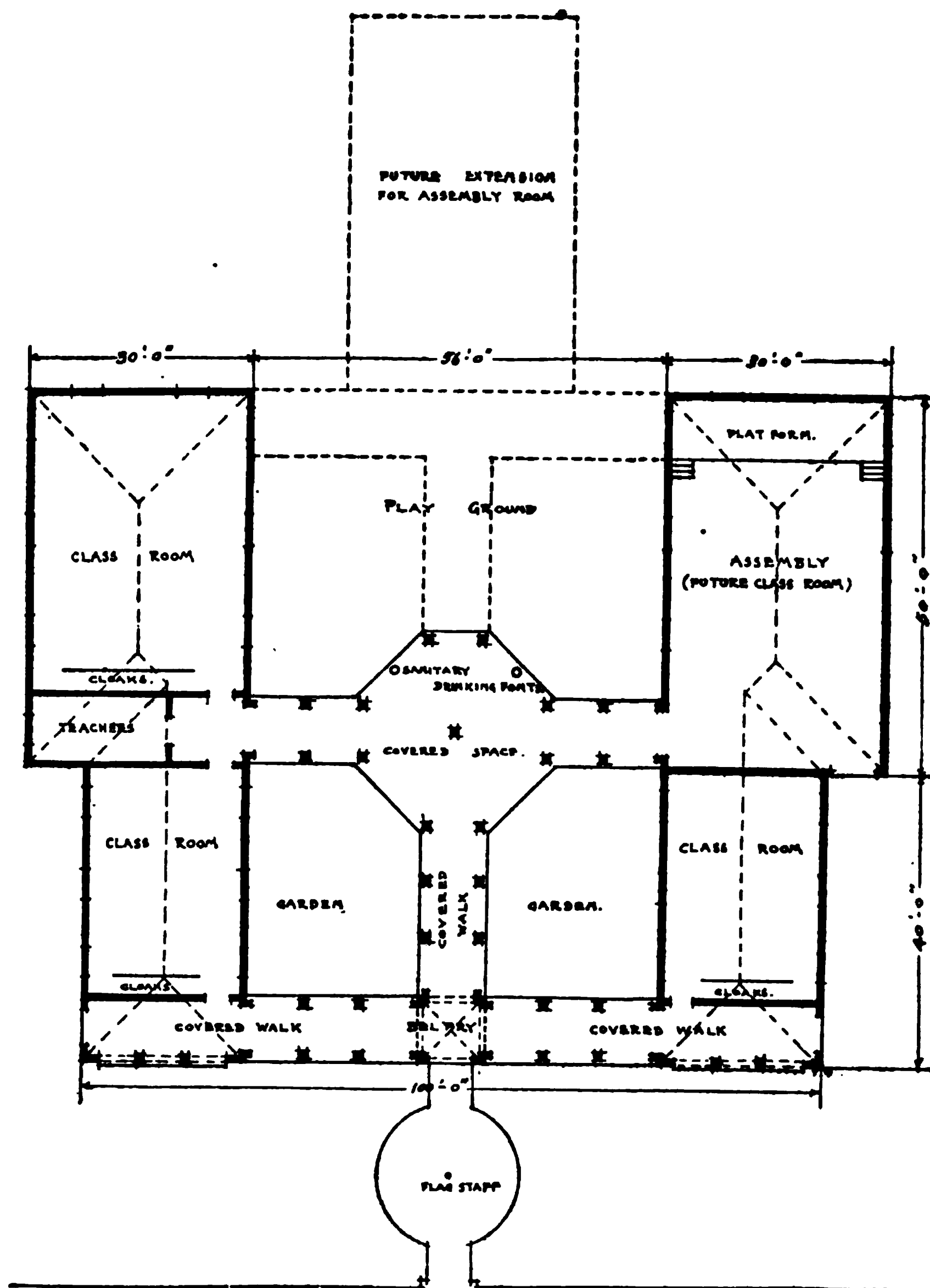


FIG. 23.—Floor plan, school at Coconut Grove, Fla.

needed, space and expense are saved by the elimination of basements for heating apparatus. If, however, heat is needed, it can be furnished by a central detached plant for the use of low-pressure steam

or, if the climate is sufficiently mild in winter, fireplaces could be installed at small expense. When the windows and the system of heating are correctly arranged with due regard to the demands of ventilation, fresh air can be introduced by proper manipulation of the windows, and thus much annoyance and expense may be saved.

This brings up the matter of the location of the windows in this building, both as shown in the floor plans and in the photographs. It would have been very much better if the light had been admitted from one side only. If double the number of windows had been placed in one side, and breeze windows—that is, short windows set 8 feet above the floor—had been set on the other side of the classroom, the lighting would have been far more satisfactory and the ventilation more evenly distributed. Unilateral lighting of classrooms is the only justifiable method (see chap. 6). The height above the floor of the lower part of the windows is $3\frac{1}{2}$ feet. For the advanced classes 4 feet would have been better. The lower part of the windows should always be above the level of the eyes of the children when seated at their desks.

If the windows had been grouped on one side of the classrooms, as suggested, and even the same form of sash used as is shown, the classrooms of this building could be almost instantly turned into practically open-air rooms. If the sashes were made in one piece and either hinged at the top and opening in, so that they might be drawn up to the ceiling, leaving the window space entirely open, or possibly pivoted in the center, another advantage would have been gained. In fact some of the windows in this building are pivoted.¹

On account of the immediate demand for a small assembly room, the classroom opposite has been made too wide for economical construction and classroom work. In low structures of this type the classrooms should never be over 24 feet wide, and preferably 22 feet if the number of pupils in each classroom does not exceed 30 or 35. Those who build after this model would do better to sacrifice the width of the temporary assembly room to the classroom than to expand the classroom for the sake of the temporary assembly room. The two smaller classrooms in front are approximately correct in size and proportion.

The cloakrooms should receive their ventilation and lighting immediately from the outside instead of from the classroom. This change could be easily made by simply extending the partition to the outer wall and opening a window. Doors to the cloakrooms could then be set in the most convenient places.

Aside from the foregoing suggestions, only praise and commendation are to be given to this building for its beauty and adaptability

¹ According to Mr. H. H. Bundy, the architect, to whom thanks are due for the photographs and drawings here reproduced.

to country-school conditions. It suggests the open air, will blend well with almost any setting, is economical of material, easy of access, and wholly inviting. The courts and pergolas unify as well as beautify, and the spirit of it all is quiet, unassuming, and restful.

A final word of suggestion may not be amiss. It has to do with the "future" assembly room. Here is a splendid opportunity for an open-air theater. In Florida there are comparatively few days even in winter when, instead of using an inclosed room for assembly purposes, an open-air theater might not be used, especially for short periods of morning exercises and for general midday gatherings. Let us suppose, therefore, a moderate excavation made back of the court, a series of concrete amphitheater seats and a liberal stage

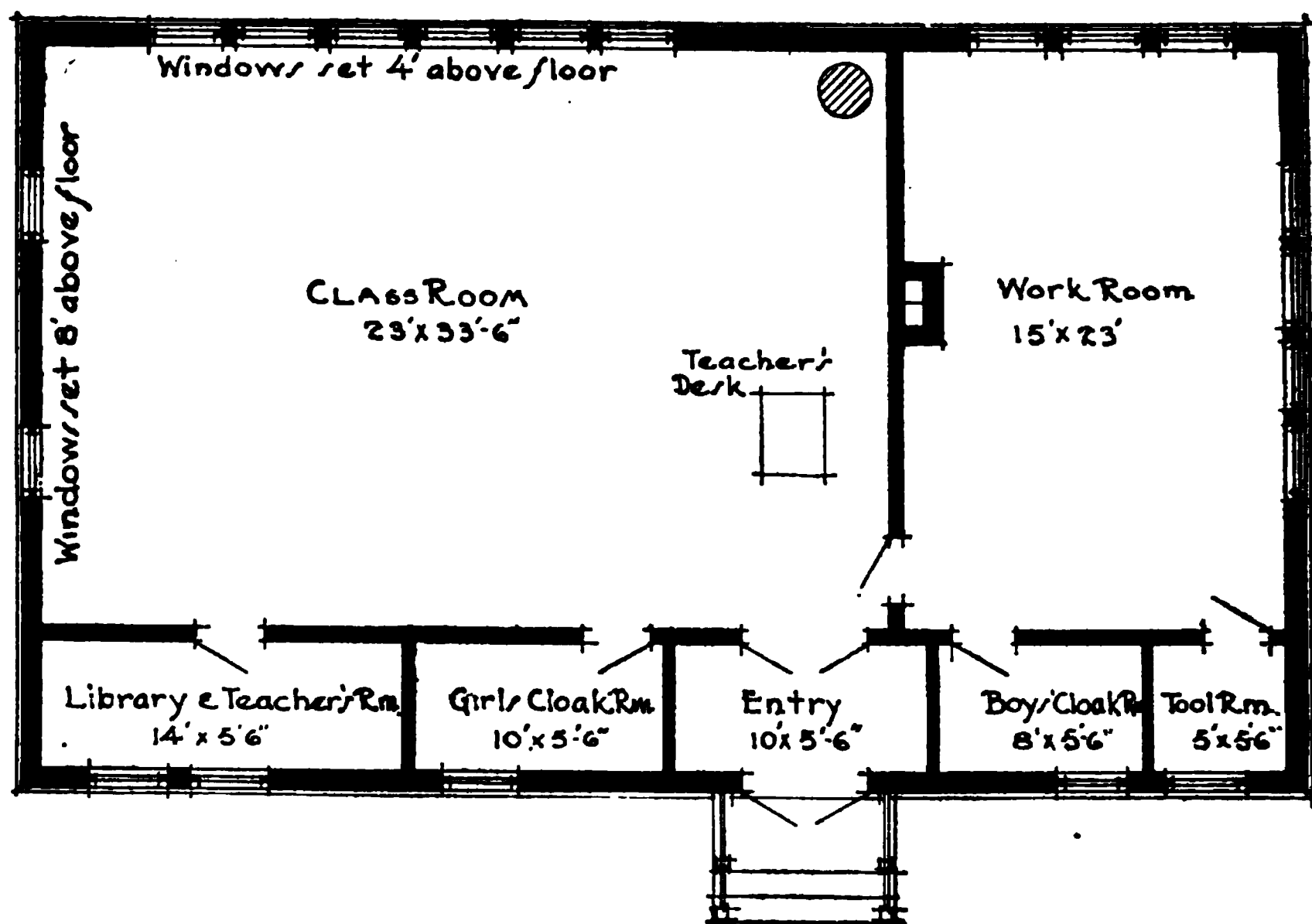


FIG. 24.—Plan of one-teacher rural school, designed by J. L. Sibley.

erected, and all protected from the wind by properly placed walls and from the rain by a roof designed to harmonize with the whole scheme. Such an assembly room would be far more useful and attractive than an inclosed building, however well it might be constructed. Of course this open-air assembly room would have to be adapted to meet local weather conditions. In the section of Florida where this school is located the heavy beating rains of the autumn season would make it difficult to keep the water out of the slight excavation that would be necessary. This might be overcome by drainage in most places or, where it is possible, by taking advantage of a natural slope without excavation. Many parts of the South and West would not have to make such decided efforts to guard against beating rainstorms as would the east coast of Florida.

The one-teacher rural school described in the following specifications and illustrated by figures 5, 8, and 24, is from plans drawn by Mr. J. L. Sibley, one of the rural-school supervisors of Alabama. It is designed to accommodate 40 to 45 pupils, and, as will be seen, has a workroom, a tool room, two cloakrooms, and a library in addition to the classroom. The dimensions of each room are shown on the floor plan. The height of the ceiling is to be 12 feet between ceiling joists and floor joists, making the distance between finished floor and finished ceiling approximately 11 feet 8 inches. Other dimensions will appear in the specifications.

SPECIFICATIONS FOR ONE-TEACHER RURAL SCHOOL.

The building is to be 18 inches above ground. The corner pillars to be 8 by 32 inches; other pillars to be 8 by 16 inches. Sills to be 4 by 8 inches. One sill to pass through center of the building and be supported by 8 by 16 inch pillar. Joists to be 2 by 10 inches, set 20 inches O. C. Studs to be 2 by 4 inches, set 24 inches O. C. Ceiling joists to be 2 by 6 inches, set 24 inches O. C. Ceiling joists over teacher's library, vestibule, cloakrooms, and tool room to be 2 by 4 inches, set 24 inches O. C. Rafters to be 2 by 4 inches, set 24 inches O. C., and well braced by a tie across from rafter to rafter—this tie to be placed about half way of each rafter. Building to be 12 feet between ceiling joists and floor joists. Blackboards to be 4 feet wide, 30 inches from the floor, and to run around three sides of the room where there are no openings.

If no weights are to be used on windows, the window frames are to be made so that the top sash can be let down 12 inches from the top by means of a hinged strip, which forms a part of the blind stop, and is the width and thickness of sash.

The following bill of lumber and other material is required:

Lumber:

- 9 pieces, 4 by 8 inches by 18 feet—Sills.
- 4 pieces, 4 by 8 inches by 16 feet—Sills.
- 62 pieces, 2 by 10 inches by 16 feet—Floor joists.
- 26 pieces, 2 by 6 inches by 24 feet—Ceiling joists set 24 inches O. C.
- 13 pieces, 2 by 4 inches by 14 feet—Ceiling joists set 24 inches O. C.
- 24 pieces, 2 by 4 inches by 20 feet—Rafters.
- 8 pieces, 2 by 4 inches by 20 feet—Cripples.
- 8 pieces, 2 by 4 inches by 16 feet—Cripples.
- 12 pieces, 2 by 4 inches by 14 feet—Cripples.
- 8 pieces, 2 by 4 inches by 12 feet—Cripples.
- 10 pieces, 2 by 4 inches by 10 feet—Cripples.
- 8 pieces 2 by 4 inches by 14 feet—Hips—spliced.
- 33 pieces 1 by 6 inches by 20 feet—Ridge saddle and roof braces.
- 30 pieces 2 by 4 inches by 16 feet—Plates.
- 100 pieces 2 by 4 inches by 12 feet—Studding.
- 41 pieces 4 by 4 inches by 12 feet—Studding posts.
- 18 M No. 2 shingles.
- 1,200 square feet sheathing.
- 2,000 square feet No. 2 flooring.
- 2,850 square feet weatherboarding, $\frac{5}{8}$ by 6 inches.
- 6,850 square feet ceiling required (approximately); for each room divide as follows: Classroom, 2,685 square feet; workroom, 1,485 square feet; vestibule and teacher's library, 1,415 square feet; cloakrooms and tool room, 1,100 square feet.

Lumber—Continued.

3 pieces 1½ by 12 inches by 10 feet—Treads.

3 pieces 1 by 7 inches by 10 feet—Risers.

1 piece 2 by 12 inches by 14 feet—Stringers.

Windows:

18 windows 10 by 18 inches—12 lights and frame complete.

2 single sash 10 by 18 inches—12 lights and frame complete.

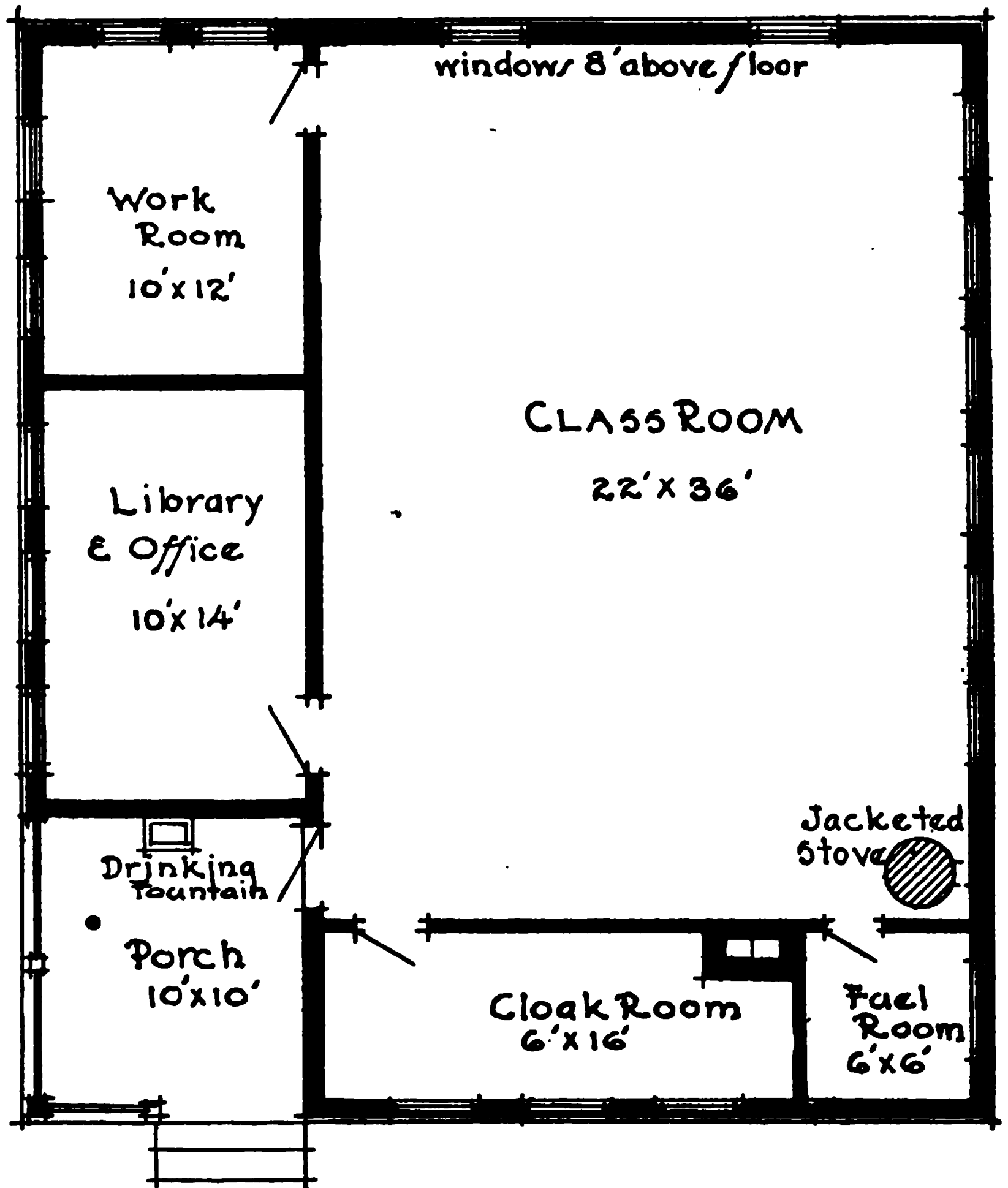


FIG. 25.—Floor plan for one-teacher rural school of minimum cost.

Doors:

1 door 3 by 7 feet by 1½ inches—No. 2 and frame complete.

4 doors 2 feet 8 inches by 6 feet 8 inches by 1½ inches—No. 2 and frame complete.

1 double door 5 by 7 feet by 1½ inches—No. 2 and frame complete.

900 feet of quarter round.

Two 6-inch T. C. thimbles.

Bricks and lime: 1,100 for chimney; 540 for pillars; 1,200 underpinning; 4 barrels lime.

Nails: One keg 20d.; 1½ kegs 8d.; 2 kegs 6d.; 60 pounds shingle; 20 pounds finishing.

Locks: 6 rim locks; 1 front-door lock.

Hinges: 7 pairs hinges, 3½ by 3½ inches, loose pin; 3 pairs hinges, for single sash.

Transom lifts: 3 transom lifts—1 for each single sash.

Paint for house—outside and inside door frames: 100 pounds white lead, 10 gallons linseed oil, 2 pounds lampblack.

Classroom: Walls, 4 packages kalsomine—light buff; ceiling, 2 packages kalsomine—cream.

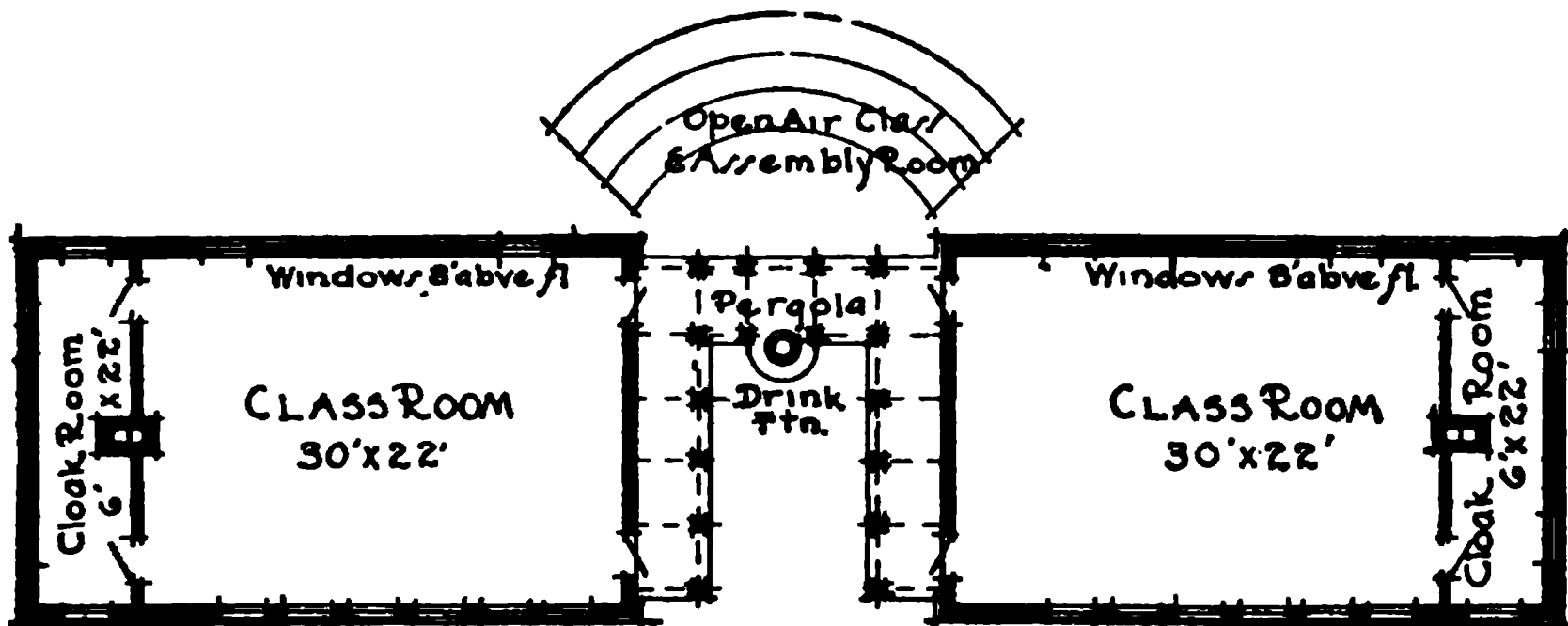


FIG. 26.—Two-teacher rural school; connected by pergola.

Workroom: Walls, 1½ packages kalsomine—light buff; ceiling, 1 package kalsomine—cream.

Teachers' library, cloakroom, and vestibule: Walls, 3 packages kalsomine—light buff; ceiling, 1 package kalsomine—cream.

Figure 25 represents a drawing for a floor plan of a one-teacher rural school reduced almost to the limit of inexpensiveness. It contains a classroom, a fuel room, a workroom, a library and office room, and a cloakroom. The representation for this building should include an uncovered porch and a low, flat roof, with wide eaves.

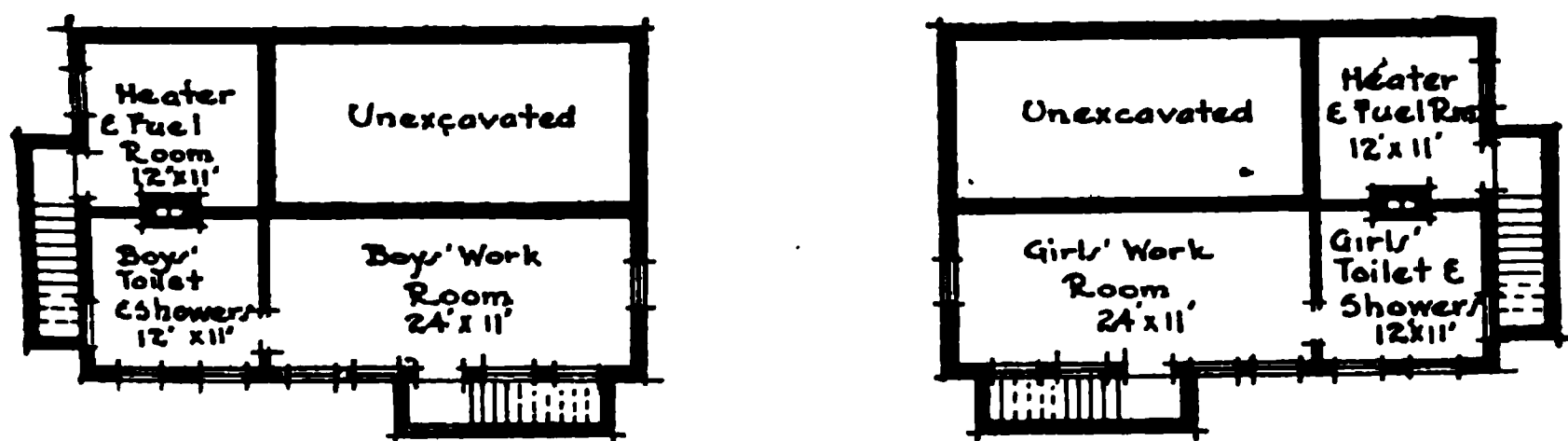


FIG. 27.—Basement plan of two-teacher rural school.

This plan in the hands of an artistic architect would suggest an attractive building and satisfy a community yet unable to supply more than its actual needs.

Figures 26 and 27 represent drawings for floor plan and basement of a two-teacher rural school. As will be seen, these are separate buildings, connected by pergolas or a court. These pergolas can be constructed of rough timber and covered with vines. The court can be

used as a flower garden or grass plat, as seems most suitable. In the center of the cross pergola a drinking fountain is suggested, with a wall about 5 feet high between it and the platform for the open-air assembly room. This arrangement would give privacy to the open-air

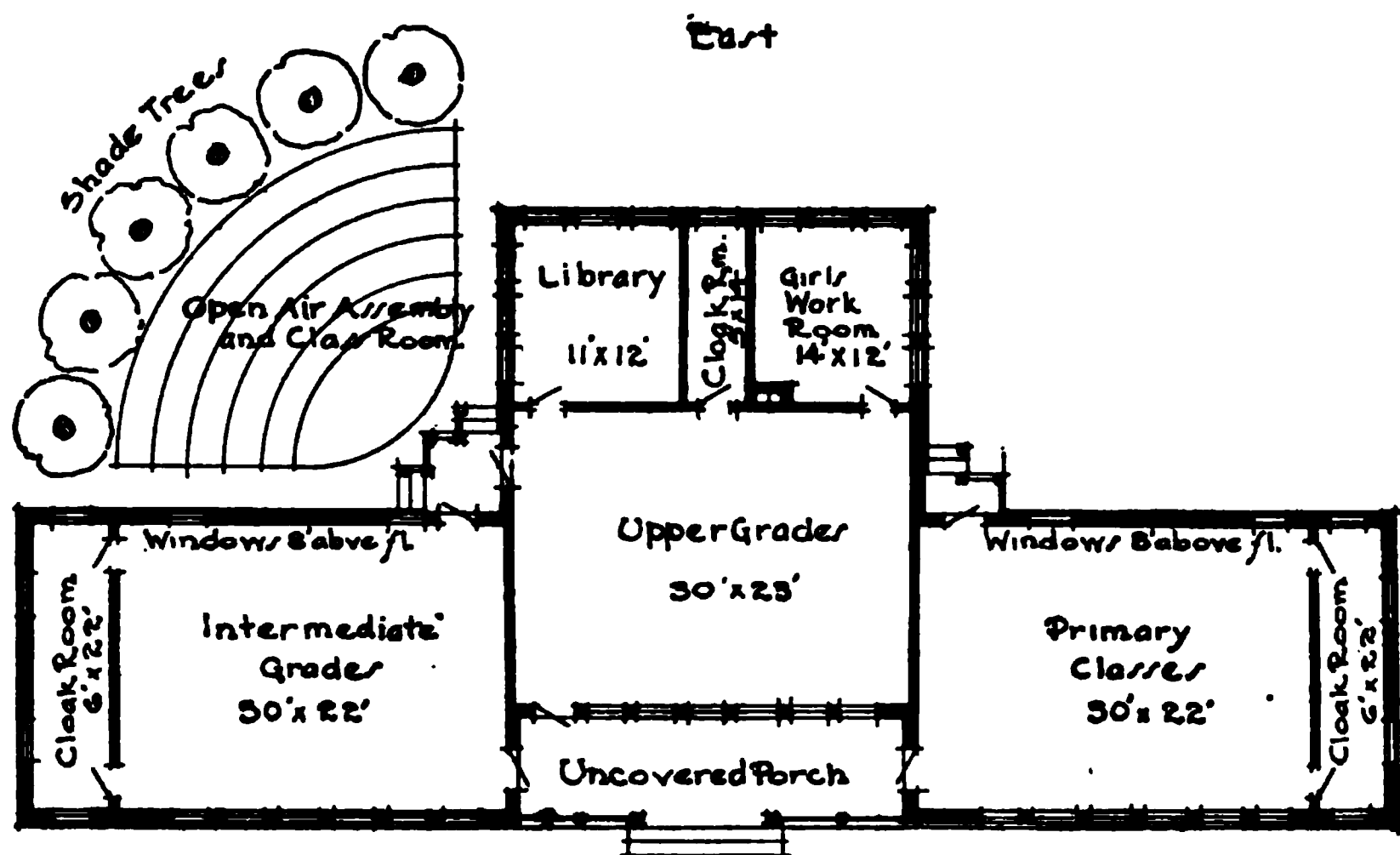


FIG. 28.—Floor plan, three-teacher consolidated rural school with open-air assembly and class room.

assembly room and would furnish a background for a small stage under the pergola. The posts for these pergolas should be at least 8 feet above the ground and may be set at such distance as the

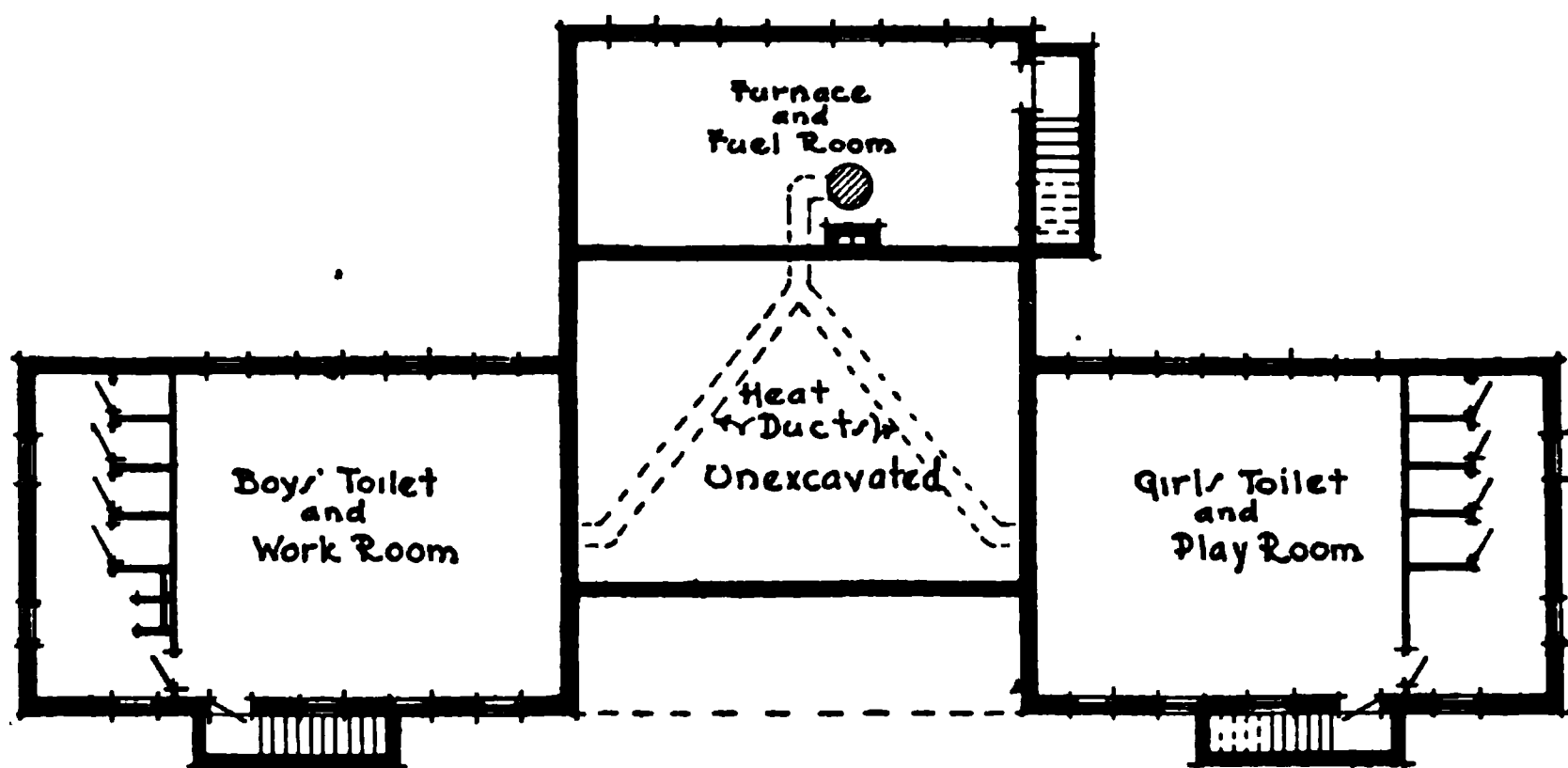


FIG. 29.—Basement plan of three-teacher building shown in Fig. 28.

builder sees fit. The side pergola should be about 6 feet wide and the cross pergola about 10 feet.

The basement is designed to supply a workroom for the boys and one for the girls, with toilets and separate heater in each. The unexcavated area is indicated. These basement rooms should be

well drained and well lighted. The entrance to these toilet rooms should be through the workrooms, thus insuring privacy and preventing additional expense in the way of steps. The entrances to the furnace and fuel rooms are indicated in the drawing.

It would be economical and satisfactory in this building to use a low roof with comparatively wide eaves. No towers or belfries are permissible.

Figures 28 and 29 are floor plans and basement plans designed for a three-teacher consolidated rural school with a suggestion for an

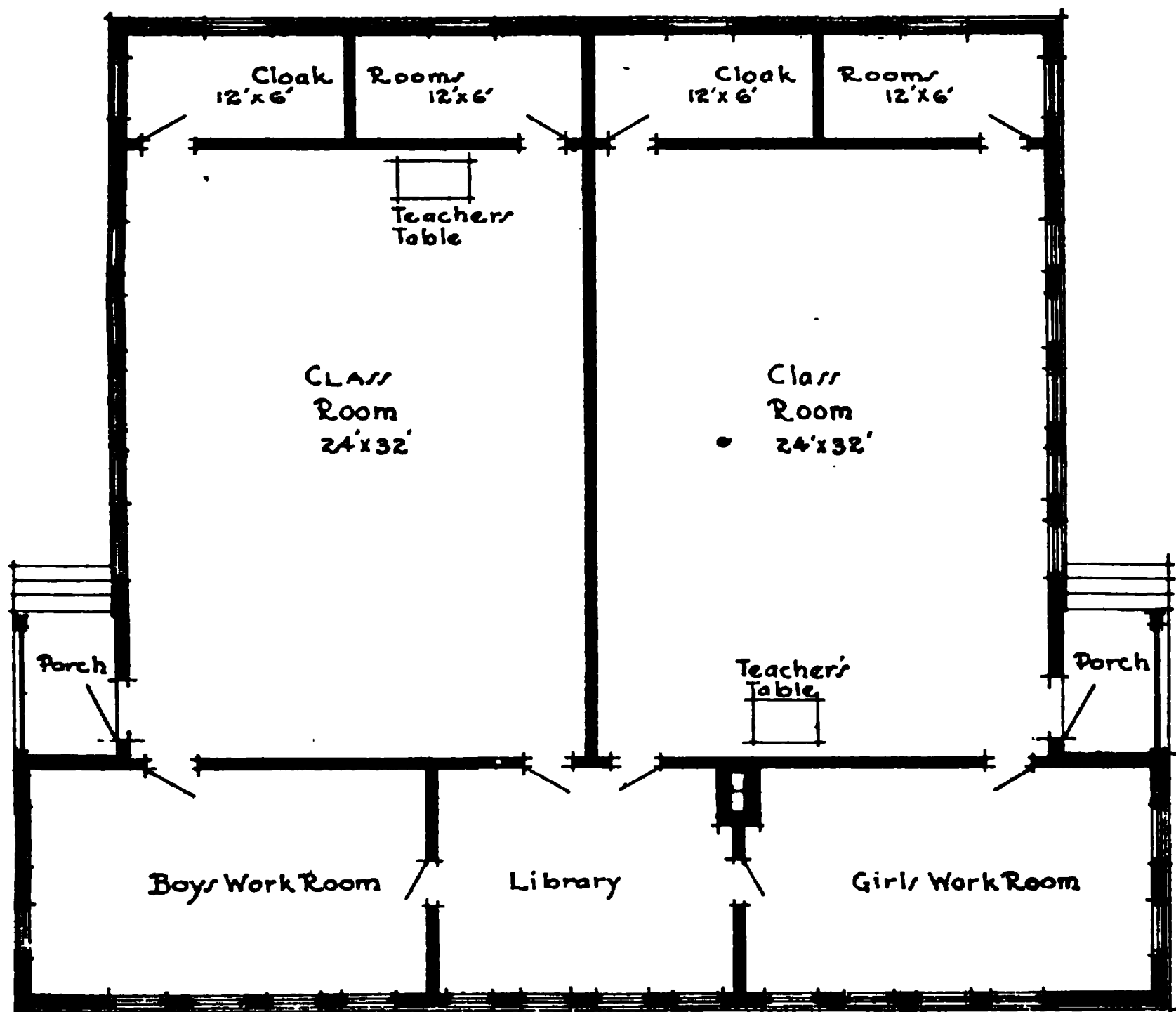


FIG. 30.—Two-teacher rural school.

open-air assembly and classroom. In addition to the cloakrooms opening off each classroom, the floor plan shows a library and a girls' workroom. The basement plan represents a fuel and furnace room and an unexcavated area, boys' toilet and workrooms, and girls' toilet and playroom. The ducts for heating the rooms can be carried under the floor of the central room, or, if a steam or hot-water system is used, pipes can be managed in the same way, thus giving opportunity for a central heating plant for all the rooms. The flue can be made double, to serve both for the furnace and for a range in the girls' workroom. The steps to the basement rooms are indicated on the front of the building and, except in cold climates, need

not be covered if proper drainage is insured. The door to the fuel and furnace room is indicated on the south side. It may be placed at any other point if more convenient. The front porch is to be left open, and the floor should be made of cement, so that it can be cleaned most easily.

If the ground upon which the building is set slopes west, it will be comparatively easy to carry out the suggestions for the open-air assembly room. Naturally the topography of the school lot will determine the best position for the open-air theater. This schoolhouse should be constructed with a comparatively flat roof and

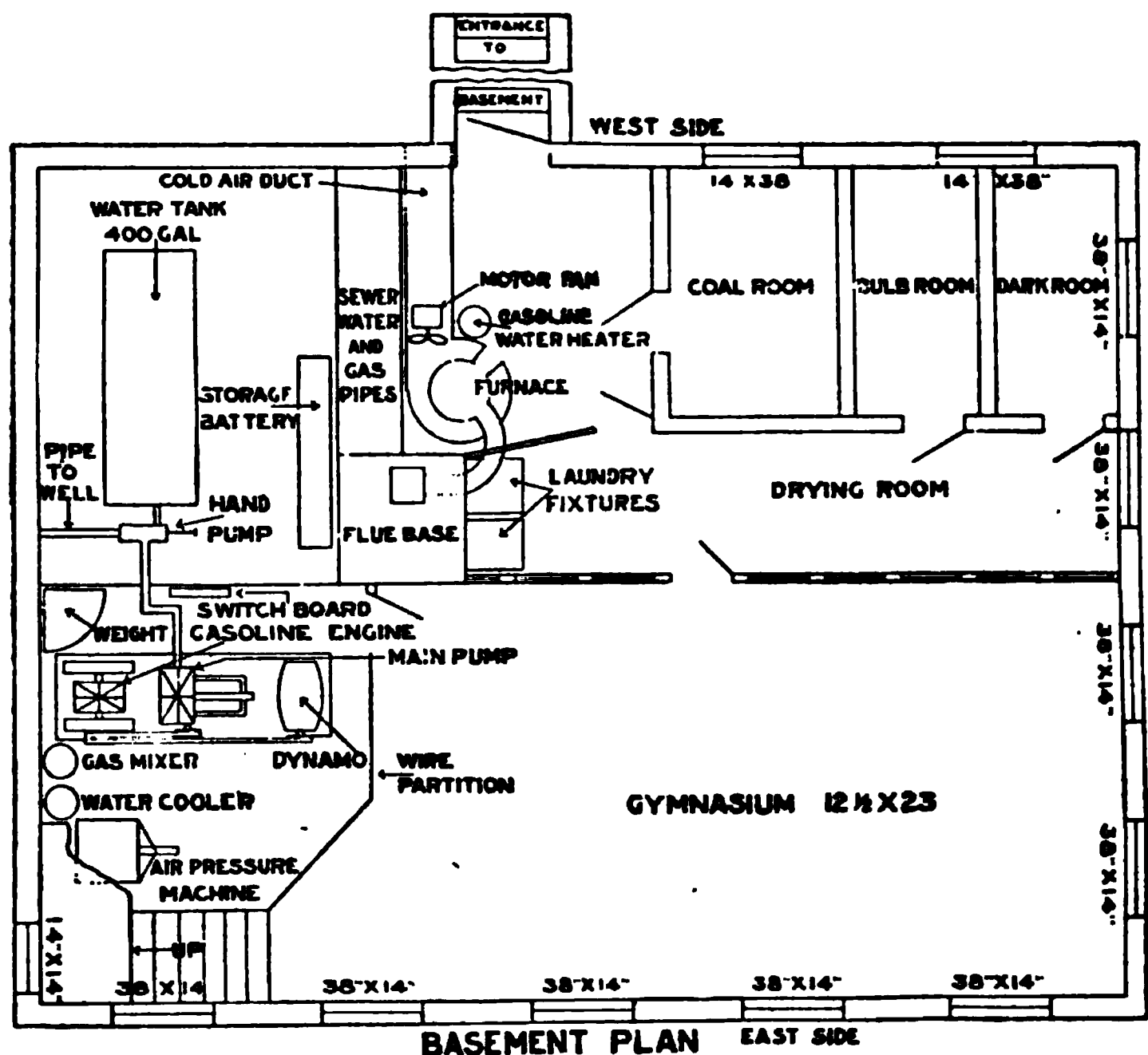


FIG. 31.—Basement plan, model rural school, Kirksville, Mo.

rather wide eaves, and with a little skill on the part of the architect could be made a very beautiful and inexpensive building.

Figure 30 represents the floor plan for a two-teacher rural school building. This plan is designed with two workrooms, a library, separate cloakrooms for the boys and girls of each room, two full-sized classrooms, and two porches. These porches should have cement floors dropped 2 or 3 inches below the entrance to the classrooms. The arrangement of the rooms with reference to each other can be easily made out from the floor plans.

The basement has outer entrances which may be covered with roofs joining to the main structure. The toilets and the bath-

rooms are ample and can be well lighted by using nontransparent, but roughened, translucent glass. This will make them private and at the same time give an abundance of light, especially if area ways are excavated. The furnace and fuel room can be lighted in the same way, or transparent glass can be used in this room. The entrance to the furnace and fuel room is made through the boys' toilet and bath, and in this way expense can be reduced and satisfactory results obtained. As planned, only a part of the area beneath the building is to be excavated. The wall, however, separating the area beneath the workrooms and the library should be solid and without communication to the area beneath the classrooms. The ceilings could be so treated as to prevent the escape of any possible

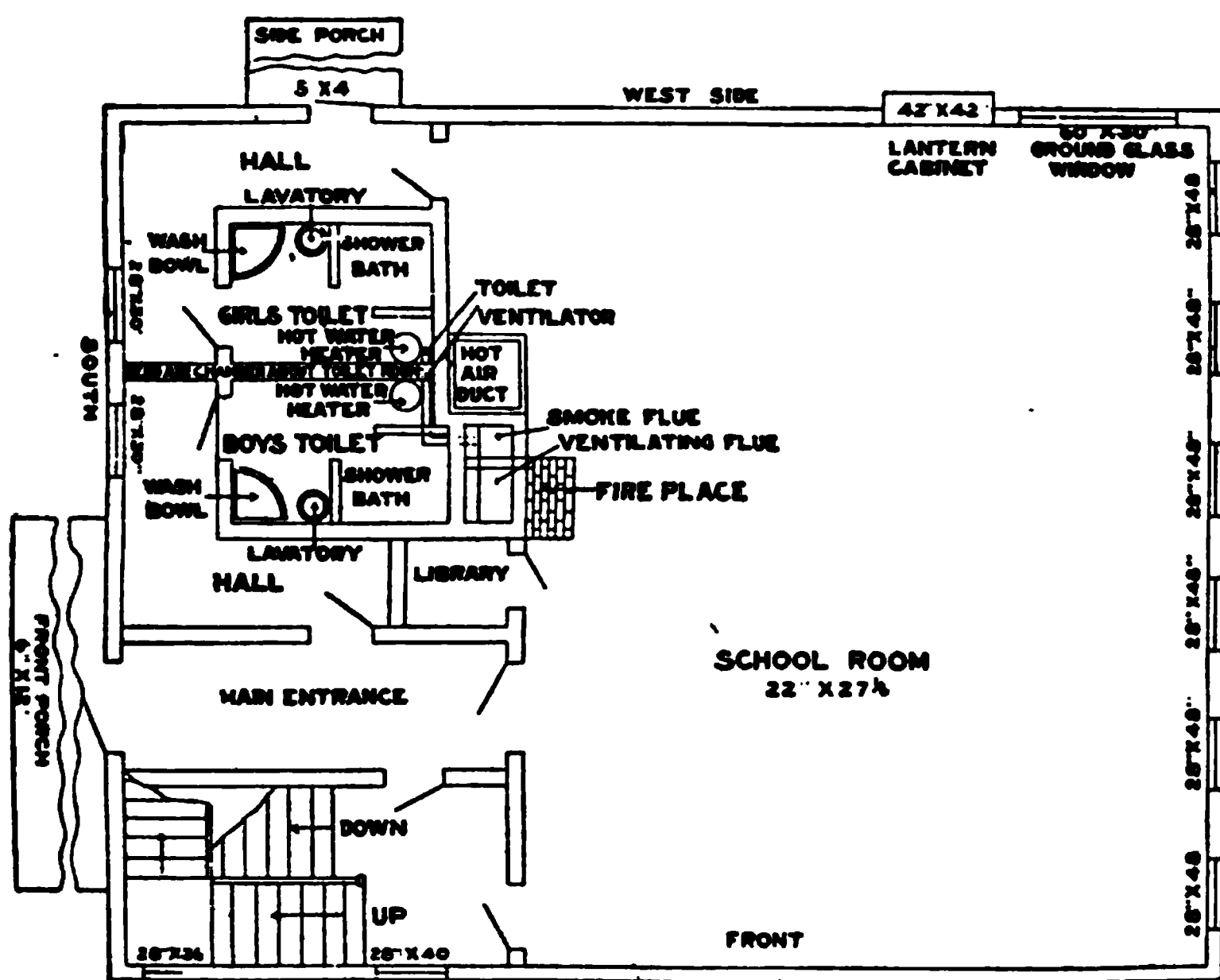


FIG. 32.—First floor plan, model rural school, Kirksville, Mo.

odors from the basement rooms to the rooms above. The toilets and the bathrooms should have cement floors, and a tile drain should surround the building, to prevent any possible seepage into these rooms. Naturally if running water is not furnished either by pressure tank or some other water supply, toilets and baths could not be introduced, and the rooms for them could then be used as workrooms.

If a hot-air furnace is used, the register should be brought up on the inner walls to a point about 8 feet above the floor, and the exits should be at the floor on the same side in order to secure a good

circulation of air. The library and the cloakrooms can be heated and ventilated in the same way. If hot water or steam is used, it would be well to put the radiators on the window side of the classroom in order to insure the best circulation in cold weather and to prevent draughts. The use of window boards with steam or hot-water heating will make it possible to get more ventilation and to insure fairly equable heat throughout the rooms. The radiators in the library and the other rooms can be located to suit conditions.

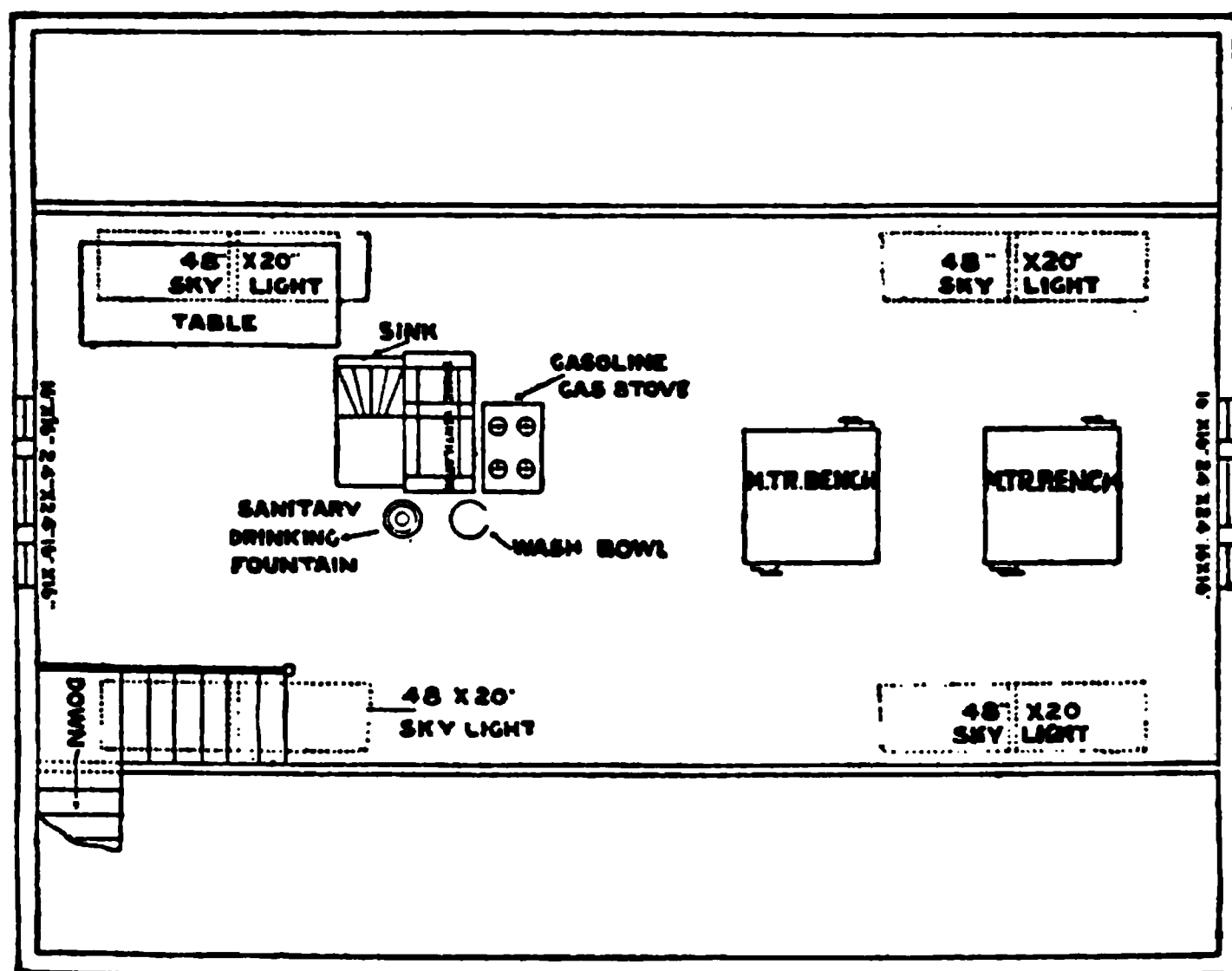


FIG. 33.—Attic plan, model rural school, Kirkville, Mo.

No breeze windows have been introduced into the ends of the classroom, because the door to the library can be left open in warm weather, thus securing a breeze through the library as well as through the doors opening to the porches.

Figures 31, 32, and 33 show the basement, first floor, and attic plans of the model rural school at the Kirkville State Normal School, Kirkville, Mo. Plate 20B shows the machinery located in the basement, by which city conveniences are made possible in a rural school.

Chapter VIII.

REMODELING COUNTRY SCHOOLHOUSES.

If the reader will picture to himself an old building with two or three small windows on each side, a door in the gable end, a high-pitched roof, surmounted by some make-believe belfry or tower, and a small chimney emerging at the comb of the roof near the center of the building, he will have before him the exterior outline of the prevailing type of a rural schoolhouse. These buildings are usually of wood and rest on brick pillars, with more or less open space between the floor and the ground, so that the wind sweeps through without hindrance. The building is generally unpainted, or, perhaps, was once painted. Many of the boards on the side are disconnected, showing the ribs of the structure underneath.

Within the building we shall probably find a box stove in the center, rusty and dirty, possibly hoisted on halves of bricks, or, if a little more caution has been exercised, standing in a box filled with sand, into which the legs of the stove extend. A rusty pipe runs straight up through the ceiling into the central flue. Double benches, ranged on either side of the stove, face toward the back of the room, where a teacher's desk surmounts a useless and troublesome platform. The floors are single, made of rough boards, and the cracks are more or less stopped up with dirt. There is no cloakroom in the rear; hats and wraps are piled up on old benches or hung on nails driven into the wall. Somewhere in this part of the room a dirty water bucket, with its accompanying long-handled, rusty dipper, contains the visible supply of drinking water. It is needless to describe the walls, the appearance of the windows, the kind of blackboards, the condition of the desks. Those who know country schools can fill out this picture in its minutest detail.

Suppose this building is in a fair state of repair; that is, too good to give up and too bad to teach school in. What can be done to make it more beautiful and more inspiring as a place for teacher and pupils? This is a practical question, and should be dealt with in a practical manner. Figure 14 represents the floor plan of an actual building, such as described. Suppose we make a study of this plan and see what could be done in the way of reconstructing or remodeling the building. The first thing to do would be to double the number

of windows on the left side as you enter the door, and, if need be, enlarge them until the floor space to be used as a classroom shall not

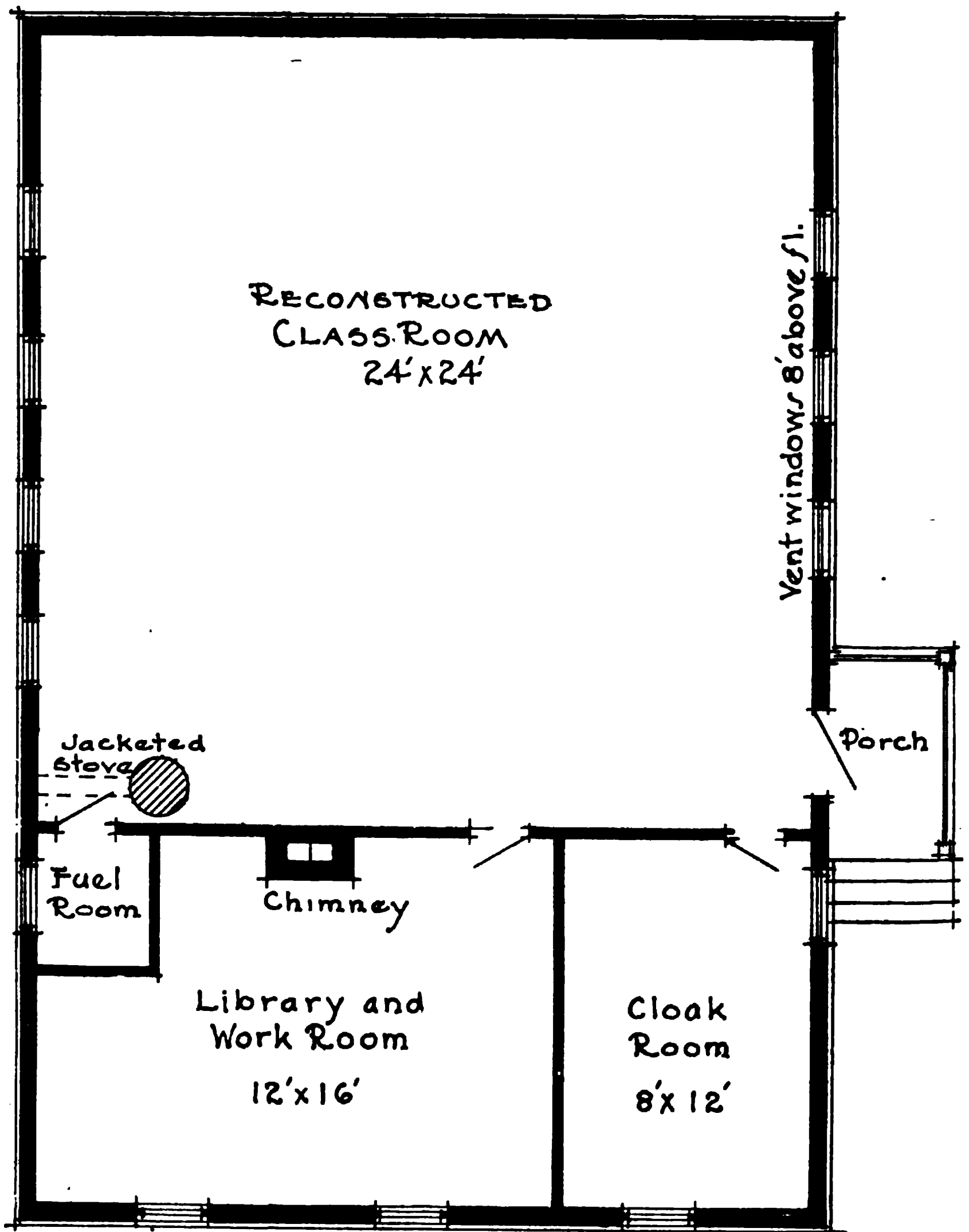


FIG. 34.—Reconstructed floor plan for an old building (based on fig. 14, p. 91).

be greater than five times the area of all the glass in the windows. This is a practical preliminary step to assure economical proportions of light and space, with due regard to hygienic requirements. In all probability this floor plan, which is 36 feet long and 24 feet wide, represents one-third more space than would be needed for a class-

room, if the seats were properly arranged, the stove better placed, and the lighting well adjusted.

In the second place, it will be necessary to study the school population of the district to discover how many children of school age really reside in that district and how many are likely to attend school. Suppose the average attendance for the last three or four years has not been greater than 25, which number represents the attendance in a large majority of the district schools. For this number of pupils the room is needlessly large; hence we ought to reduce it, not by sawing the building in two, but by erecting a partition and utilizing the rest of the floor space for other purposes. If, on the basis of 25 pupils, each pupil is allowed 20 square feet of floor surface—a liberal estimate—then 500 square feet would represent the floor surface of the schoolroom needed for class purposes. The room is 24 feet in width; hence a length of 22 feet would yield 500 square feet and some space to spare. Suppose for good measure and for possible increase in the number of pupils during the winter time the room be made 24 feet square. These dimensions would give enough floor space for approximately 29 pupils, and would still leave a space 12 feet wide and 24 feet long at the rear of the room which, if partitioned off, would make the classroom much more attractive and usable as a schoolroom. The partition would cut off the door, and an entrance would have to be made elsewhere. Probably the best place for it is that shown in in figure 35, for the small porch needed will be inexpensive and the door will be convenient both to and from the classroom. The remaining long window on this side of the classroom could be removed to the other side, and two or three small windows for ventilation could be set 8 feet above the floor. Three ventilators, probably two, would be ample in most climates. In order to get sufficient light, two more windows should be added and set, as indicated, in the left wall. The space occupied by the old door can be readily adapted for an extra window.

Out of the space thus cut off a cloakroom 8 by 12 feet should be made, as shown, and also a small fuel room. The doors should be set as indicated. There still remains a good-sized room to be utilized as a library or as a general workroom.

If it be deemed better to use this space for a library, then the following suggestions may be worth while: The first need is a teacher with some vision and enthusiasm to build up in the district school a school and community library; then some cooperation from the county superintendent or the county board of education, some help from the State superintendent's office, some help from the women's library associations or clubs, a little aid from all in the community willing to lend a book, give a book, or donate sufficient money to buy a book; and the library work begins. A teacher who would undertake this work

would doubtless have some taste. She would want to make this room the most beautiful in the building and would devise ways and means for cleaning and preparing the floor and for obtaining a few tasteful rugs, some inexpensive but beautiful pictures, a reading table, and some chairs. As a result, instead of the disagreeable and desolate appearance of the old schoolroom, there would be an attraction—a

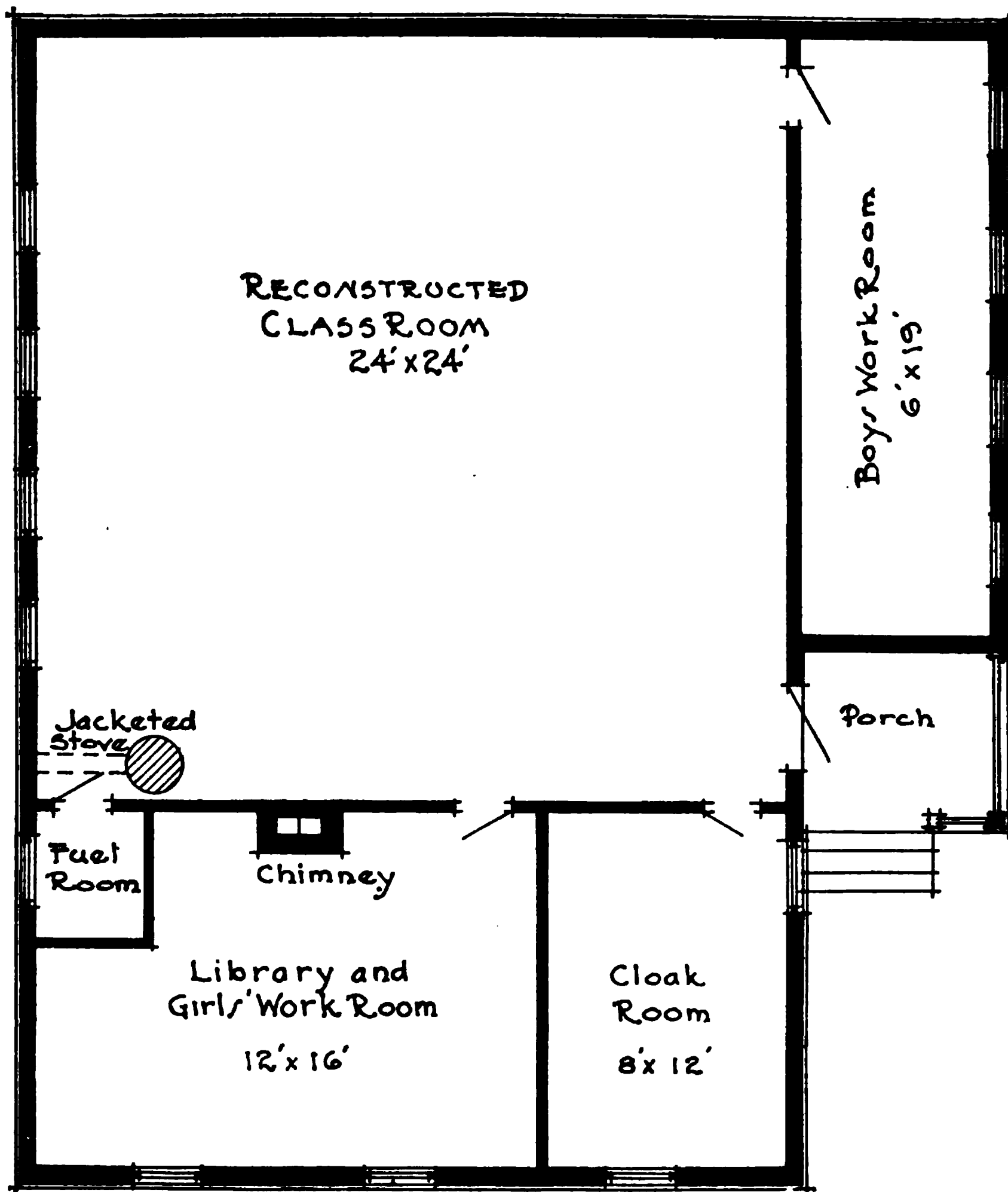


FIG. 35.—Same plan as figure 34 with better division of floor space.

room with books, with magazines; a place for the people of the neighborhood to come, even during school time, to read and borrow books; consequent opportunities for more sympathetic contact with the school situation.

“How much would this reconstruction cost?” This question can not be answered with any exactness, because of different labor condi-

tions in different parts of the country; but surely changing one door, removing one window from one side of the room to the other, adding three large windows, adding two or three small windows and two doors, changing the location of the flue, and replacing the stove could be done at a comparatively small expense. The relocation and grouping of the benches would cost nothing, and the material equipment of the library could grow as conditions permit. The cost of the partition walls and of the new porch would augment somewhat the sum of these expenses.

Of course a regular jacketed stove should replace the old box stove as soon as possible, or the old stove should be surrounded with a sheet of galvanized iron, set 6 or 8 inches above the floor and extending about 8 or 10 inches above the top of the stove: This shield should encircle the stove on all sides save that in which the door is situated, and it need not be over 8 inches distant from the stove at any point. With this arrangement pupils can sit near the stove without being overheated, and the circulation thus set up will enable the whole room to be more equably heated than before.

Imagine if you can, the different spirit that would come over a pupil, say, of the seventh or eighth grade, who was permitted to spend part of his day at work in the library instead of being required to remain in the classroom, listening to the droning lessons of the younger pupils and being distracted in many ways.

This is only one of many methods of remodeling this sort of a district schoolhouse. We might take the same floor plan again and by going to a little greater expense extend the entrance porch and build a workroom 8 or 10 feet wide off it. If this addition were properly proportioned, it would not greatly disfigure the building, for starting with a bad form, we must look primarily toward added usefulness. The expense of making this addition would of course be greater, but it would make a more complete country school. In the workroom thus proposed all of those things pertaining especially to the home life of the children could be undertaken and the curriculum could thus be greatly enriched.

Old buildings are not the only ones which need remodeling. Suppose, as an example of what might be done in increasing the usefulness of a new building, we take the new and in many ways excellent rural school building now in use in West Virginia, represented in plate 15B, which shows its general outside appearance and location. Very slight excavation and the placing of windows and doors in the basement walls would have sufficed to make it possible to introduce a furnace, a fair-sized workroom, toilets, and baths under this building, one side of which is high above the sloping ground of a steep hillside.

If the money spent on the tower had been used in developing the basement, probably there would have been little need of adding to that sum to make the basement entirely suitable for the purposes indicated. In addition to its usual uselessness, this tower is bound to interfere with the chimney draft when the wind blows from the direction of the cupola. A steep roof is not needed on this building, even though it may be in a snowy country; for it is not difficult on a small building of this sort to construct a roof that would withstand all of the weight of ordinary snows.

In the main, the lines of this building are good. The building, as it stands, suggests a tasteful and sanitary interior, in which cloak-rooms are furnished, a jacketed stove is employed, and at least some semblance to a library is provided. But note the school ground, the outhouse, the coal piled up in the yard. Telegraph wires are visible, and in all probability a noisy railway is near. What is needed here, in addition to carrying out the suggestions made with reference to utilizing the space beneath the building, is more ground and also more public spirit to keep the garden in good shape and to plant trees. Country school buildings frequently furnish architects a better opportunity for artistic treatment than a large school building in the midst of a great city; for the country environment is frequently more suggestive and inspiring than that possible in most cities. This building would have been much more attractive if the roof had been comparatively flat and if the color of the exterior of the building had been made to blend with the hillside above it.

What can be done in reconstructing an old rural school is illustrated in the series of photographs of the Porter School, near Kirksville, Mo. (Pls. 29 to 32, inclusive.)¹

Until September 3, 1912, Porter schoolhouse was in a condition of neglect, all too common in rural communities in the United States. The house rested practically on the ground, without foundation. A few of the shutters were still on; tramps had taken the rest for fuel. The chimney flue was at the east end of the building. There was no porch; and the door would not stay shut. Plate 29B shows one of the toilets. Comment on this outbuilding is superfluous. The tramps had used the door for fuel, and as a consequence the outbuilding had been turned into a boys' toilet. For lack of means no change has been made in this building beyond supplying door, lock, and key, and a thorough scrubbing. The toilet is locked and unlocked daily.

Plate 29A represents the Porter School to-day. The photograph was taken from the northwest part of the yard and shows the following improvements looking to the health and comfort of the children:

¹ Data and illustrations furnished by Mrs. M. T. Harvey, the teacher under whose guidance the work was done.

(a) A foundation of cement blocks.

(b) A temporary porch, steps, and walk, and a shoe scraper so designed that the smaller pupils may support themselves while cleaning their shoes. This device was planned to minimize the dust problem, for mud and dust are plentiful here.

(c) Door and window screens, the first, so far as known, in a similar school in Missouri.

(d) Spouting or guttering to carry the roof water from the building and insure a dry basement, which is well protected by a tile drain below and outside the foundation.

(e) This view does not show provision for fresh-air supply, but this has been introduced.

Plate 32B represents a view in the basement after reconstruction. A good hot-air furnace, with water attachment, has taken the place of the old stove in the middle of the room. A concrete floor keeps the basement dry and sanitary.

Plate 32A represents another view in the basement showing a pressure water tank and its connections with washbasin and bubbling cup. As will be seen, this pressure tank is well under the ground; hence the water does not freeze in winter, keeps cool in the summer, and is free from any possible contamination.

Plate 30B represents a stage in the process of reconstruction. The patched plastering, the lowered blackboard, and the removal of the flue indicate that the building is now ready for the painter and the paper hanger. During the time the interior was reconstructed school was held in the teacher's cottage. The telephone shown in this picture is an interesting attachment to a district school and is very desirable in case of accident or of severe or sudden illness and in time of storm.

Plate 31B shows that the light is from the north and enters the room to the rear and left of the benches here shown. Adjusted shades make it possible to light the room fairly well even on dark days. A light ceiling and soft tan walls contribute to the lighting of the room and give it a pleasing appearance. A bookcase has been built in and is fairly well filled with books.

Plate 31A shows the south wall of the room and indicates how cross lights are prevented by shades in rooms in which windows are introduced on two sides. Note the reproductions of famous paintings, the phonograph, and the reed organ.

Plate 30A gives a general idea of the former dilapidated condition of the interior of the building and shows the bad arrangement of the desks—an arrangement more or less necessary because the stove occupied the main part of the room, and in cold weather it had to be kept so hot that the children could not sit very close to it. Note the dirty and dingy condition of the walls, especially around the flue.

Chapter IX

TEACHERS' COTTAGES.

In Chapter II reference was made to the need of a cottage or a home on the school ground for the rural teacher, and it was there suggested that the establishment of homes for men teachers on school farms would greatly aid in the work of introducing and maintaining effective work in agriculture. It is obvious that unless rural school pupils can actually engage in experimental work in agriculture under the guidance of a competent teacher, what they learn from books will be of little practical value. But since the long vacation is coincident in most parts of the country with growing crops, unless the teacher remains in charge through the summer to guide and direct the work theoretically planned and organized during the winter months it will probably go by default. A school farm, therefore, should not only be at the disposal of the teacher, but a home should be furnished him and he should be employed by the year.

A question arises immediately whether the schoolrooms should be a part of a house designed for both purposes or whether the teacher's house should be a separate building?

In European countries, especially in small village schools, the teacher's house is usually under the same roof with the schoolrooms. In larger schools it forms a separate building, but is situated on the school grounds. While there is always an advantage in the protection of school property in having both buildings under one roof, some disadvantages are encountered. In the first place, the danger of disturbance to the school or the home must be considered. A teacher's family needs privacy; the school children require freedom. The playground should not be encroached upon, neither should the sanitary appliances be used in common by the school and the home. In general, it seems better under conditions in our country to recommend a division of the school grounds into two parts, one for the schoolhouse and playgrounds and the other for the teacher's house and the experimental farm and gardens. If every country school were supplied with 10 acres of good, well-drained land, and 3 acres of it were set apart for playgrounds and school buildings and the other 7 acres for a teacher's home and the school experiment farm, the ratio would be approximately correct

for reasonable needs in most places. The best location of the teacher's cottages, with reference to the needs and demands of the school building, could only be made after careful consideration. Subtracting the land required for garden and for all the buildings needed for the teacher, there should be at least 5 acres of land left for agricultural experimental work. And by experimental work is not meant the wasteful use of the land, but the most profitable use

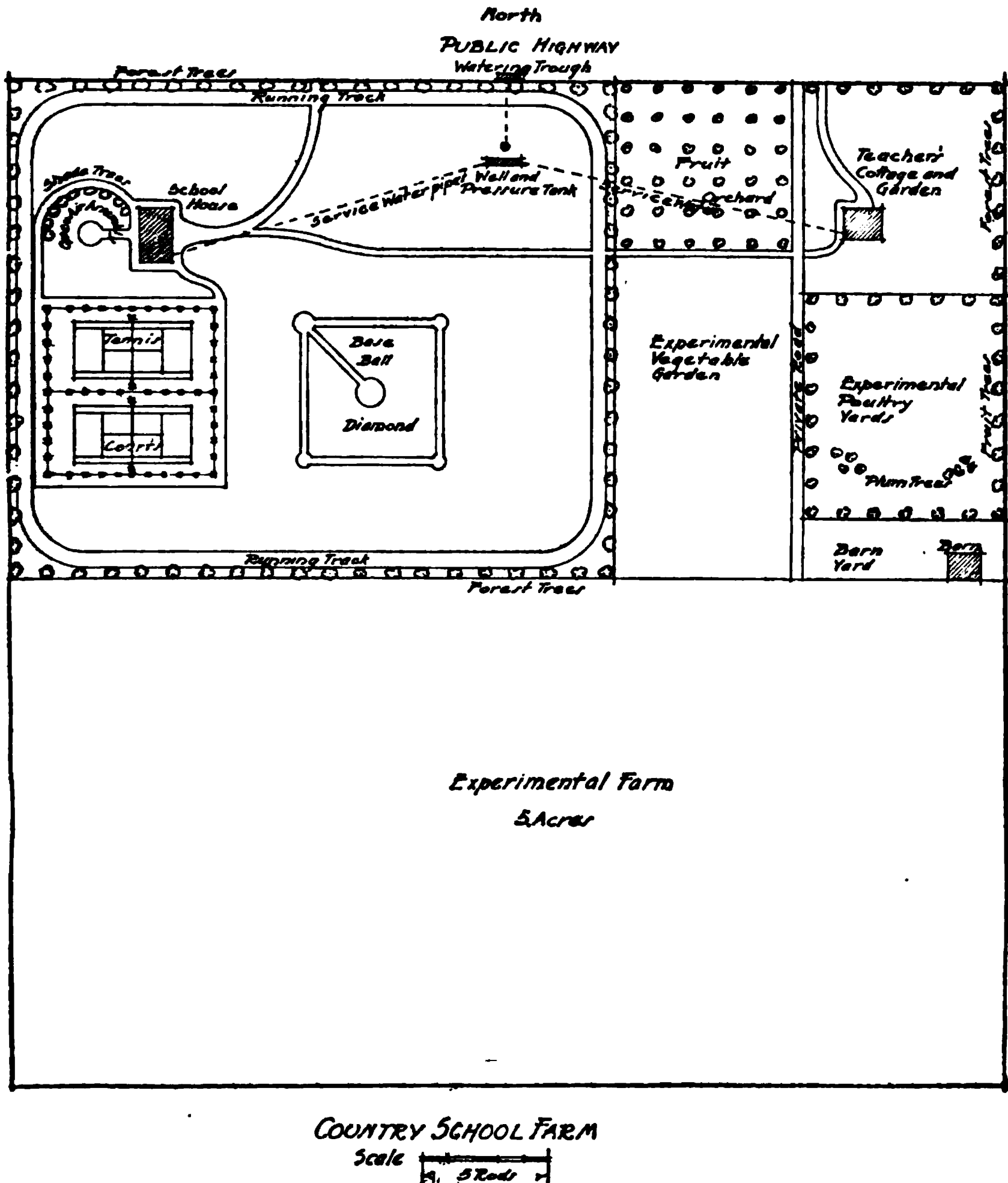


FIG. 36.—Country school grounds, showing farm of 5 acres.

of it. It is as much of an experiment and often far more useful to make an attempt to grow 100 bushels of corn, 2 bales of cotton, 300 bushels of potatoes, or 40 bushels of wheat to the acre than to attempt to grow some crop new to the neighborhood and of doubtful adaptation. Some experiments on new things are very important educationally, but these should not require much ground.

Good experimental farming does not warrant rash experimentation. The proper and wise use of the 5 acres suggested could thus be made to serve not only as an object lesson for all concerned, but to add much to the revenue for the upkeep and the upbuilding of the whole school property. If farmers can see that in their own neighborhood 5 acres well cared for will bring better returns than 20 acres poorly cared for, one of the best lessons in community thrift and intelligent farming will have been learned. Besides, the attempt to make the school farm a model for the neighborhood will be the best possible incentive and responsibility to lay upon a teacher whose specific business it is to be the moral, social, and intellectual leader in the district.

The cottage for the teacher should be as far as possible a model of its kind for the neighborhood. A beautiful, well-planned, and sanitary cottage on the school farm would help in a definite way to stimulate the farmers to build better houses (not more expensive ones) and to reconstruct to a degree those already built.

What sort of cottage should be built? The complete answer to this question must of course be left to the authorities of the district. There are, however, some suggestions applicable:

1. It should be beautiful and as far as possible should harmonize with the general architectural treatment of the school building, if the latter is a modern type. An architect should be employed and the beautification of the useful be insisted on.

2. It should include a living room, a bath room, a kitchen, a dining room, and a sleeping porch. The number of bedrooms will probably not exceed two, and these should connect with the sleeping porch. The plans for the kitchen should receive a great deal of care, especially with reference to modern conveniences.

3. The sleeping porches should be models for the neighborhood. They should be carefully screened against flies and mosquitoes and should open from small dressing rooms, capable of being used as bedrooms when necessary.

To most people in this country it will be a surprise to learn that several States, notably Washington,¹ already have teachers' cottages in connection with many of their country schools. The cuts here introduced will give some idea of the nature and style of these cottages. The good example set by Washington, Nebraska, South Carolina, and other States should stimulate many others to progress in this direction.

In this discussion the importance of cottages for men teachers on school farms has been emphasized, but without any intention of overlooking the need of them for women teachers. Very fre-

¹ The State of Washington now has 83 teachers' cottages (March, 1914).

quently a woman teacher has a hard time to find a satisfactory boarding place in the neighborhood, and for this reason alone will refuse to consider a second term in the school. Often the mere selection of a boarding place involves opposition from others who were in the race for the teacher's preference. Those who have taught in rural schools know how essential to success this matter often becomes.

Mrs. Josephine Preston, State superintendent of Washington, states in a recent communication relative to the development of teachers' cottages in that State:

The teachers' cottages really came from the failure or refusal of one of the wealthiest districts in my county (when I was county superintendent of Walla Walla County) to furnish a place for the teacher to board. As a result a cookhouse was moved into the yard and banked up by the side of the schoolhouse, and there the teacher lived all winter. Next year the district built a two-room cottage. Pioneering for teachers' cottages is over with us. A teacher must be happy and comfortable in her home life to give the best service in the schoolroom.

Cottages for men teachers on school farms are, however, far more important, if we hope to increase the number of worthy men in the work of teaching in country districts.

Plates 37 to 39 represent teachers' cottages in various States. Plates 27-28 are reproductions from photographs of combination schools and teachers' cottages in Alaska. These are under the Alaska school service of the Bureau of Education.

As has been said elsewhere, if the country school is to do the work now generally demanded of it, teachers' cottages are necessary in many parts of the country. There is no practicable way of making the district school the real social and educational center of a community without keeping the schoolhouse open and the agricultural operations under supervision during the summer months. This will of course mean a change in the plan of hiring teachers, and, more especially, it will necessitate the employment of a greater number of men for rural school work. There are many difficulties in the way, and some of them may seem almost insuperable, but progress in country life demands these changes and in time they must be made.

Chapter X.

CONSOLIDATION OF RURAL SCHOOLS AND SOME SPECIAL NEEDS IN BUILDINGS FOR SUCH SCHOOLS.

The relation of consolidation to schoolhouse construction has received less attention than the subject deserves. Many one-teacher district schoolhouses now unfit for use should not be rebuilt, and would not be if some one who sees in time what should be done would tactfully present to the people of the community the possibilities in consolidation.

A school building designed for the use of consolidated country districts will, of course, conform to the general hygienic and architectural rules for buildings of the size required, and hence there is no need of repeating those details here. But there is need of special emphasis on certain points; for a consolidated country school bears a peculiar relation to the community it serves.

In the first place, an assembly room is of special importance in these schools. The country children will find in assembly rooms the satisfaction of their desire for a wider social contact and companionship. Such rooms will also furnish opportunity for bringing parents together for entertainments, lectures, and civic gatherings. An assembly room is necessary for the morning exercises, and especially for chorus work. Music is much needed in such schools, and, as already pointed out, will appeal strongly to young people who have had to leave school. The difficulty of creating a school spirit and a neighborhood enthusiasm for general progress is greatly relieved by an assembly room.

In the second place, a commodious, well-appointed, and well-lighted library room is especially important in a consolidated school, both by reason of the need for a common center of reading and reference within the school and also because of the opportunity thus afforded to lend books and distribute them through the neighborhood. The books in a school library should be selected for both pupils and patrons, and every legitimate effort should be made to render them most useful. The library may thus serve as a sort of extension school in all that pertains to the interests of the community, in matters of agriculture, home-keeping, and sanitation, and in the dissemination of good literature.

In the third place, manual-training rooms for both girls and boys are needed. This need has been emphasized elsewhere in this bulletin, and it is only necessary to say here that this larger community school should lead in attaching the school life to the home life. In the term "manual training" as used here are included all attempts at creative effort in any worthy field of useful home activity—cooking and sewing, canning and millinery, cabinetmaking and house planning, practical electricity and plumbing, and every other manual activity helpful for country people to know.

In the fourth place, some room or special building should be set aside for experimental agriculture and gardening. The statement has recently been made that if the methods used in seed selection and cotton culture on the demonstration farms in the South were universally applied by the farmers of that part of the country, the cotton crop would be doubled and would add \$240,000,000 annual profits to the national income. This is only a sample of the opportunity these schools have.

Finally, emphasis should be laid on the need of an adequate supply of pure running water in order that lavatories, baths, and particularly a system of flushing toilets and of septic disposal of sewage may be installed in every consolidated country schoolhouse. This need is particularly characteristic of the consolidated school. A dignity and an importance never attached to the one-teacher school are attributed by the patrons to the consolidated school. It is their "big school." Even the country high school is rarely so close to the people as the consolidated school may become, because the high school does not touch so many homes directly, and because the average farmer does not understand the high-school curriculum so well as that of the consolidated elementary school.

Not long since the writer had an opportunity to travel over a portion of one of the Southern States in company with the several State officers of public education. One-teacher schools and also several central or consolidated schools were visited. Opportunity was afforded to talk with many farmers as we passed through the country, and the one lasting impression brought away was the personal pride everywhere exhibited by these country people in their "big schools." In all their conversation about them an eager interest was manifested, for the schools were opening to their children opportunities they themselves had never had. This sentiment is general. Along with this interest and trust in the school go the corresponding responsibility and prestige of the school in the community, because of which the community is inclined to adopt and employ what it finds in operation in the school.

Now, it is possible to supply schools and farmhouses with running water at no great expense, although the farmers will have to be

shown how this can be done, and actually see the plan in operation before they will take much interest in it. Not, only, therefore, for the sake of the children at school, but as an educational agency for the community, all consolidated schools should be supplied with the best of sanitary fixtures and with pure running water.

Consolidation of schools does not always imply the necessity of the expense involved in transporting children from the abandoned districts to the central school. This is usually necessary only in sparsely-settled communities, where many schools have combined into one, or in rigorous climates, where walking would be dangerous for the children. In some parts of the country the question of transportation is often negligible, or nearly so. Generally speaking, if three schools in adjoining districts are combined into one, the children can still walk to school without danger or inconvenience.

Obviously the cost will be less to transport the children of two schools to the consolidated school when the number of children in the two schools will not total more than the number which one teacher can handle effectively, for the cost of a teacher and the maintenance of an extra building will more than pay the expense of public transportation.

Experience shows also that a saving in cost of operation may be effected if several one-teacher schools, with a small enrollment in each, are combined into one central building, in which the work can be done more effectively with fewer teachers. Here, as in the case suggested above, the saving in salaries, fuel, insurance, and repairs may be more than enough to pay the cost of transportation. Such a possible saving will depend largely on the distribution of the children in the districts, on the condition of the roads, and on the opportunity afforded for securing transportation of the pupils at a reasonable cost. If the school authorities are compelled to furnish wagons and if the combined distance is such that it is not possible to use fewer wagons than the number of schools abolished, the cost of transportation will easily exceed the saving.

For all schools in which the number of teachers employed would be equal whether consolidation were undertaken or not, the expense of transportation would likely overrun any immediate saving due to consolidation.

If new buildings are necessary in several single districts, and if instead of building a number of one-teacher schools the districts combine to build a central school, the immediate expense would be lessened. In the more densely populated rural districts many of the children from abandoned districts may be able to walk during a part of the year to and from the central school without serious hardship, and a definite saving in administration may be effected. Since the conditions are so diverse in different parts of the country, due to

climate, to lack of good roads, and to social distinction of one sort or another, the financial outcome of any scheme of consolidation must be very largely a local problem.

A comparison of the immediate expense incurred for each school does not, however, always tell the chief part of the story. Sometimes consolidation actually costs more, dollar for dollar, and yet there may be a saving. The cost of schools should always be considered in the light of the results attained. A consolidated school offers better opportunity for effective grading and classification of the pupils than a one-teacher school, but above all it gives each child more of the teacher's time for personal help and guidance. A teacher whose school hours must be divided among the pupils of seven or eight grades, with 25 to 30 recitations a day, can not use her time most helpfully to her classes. Especially is this true with the younger children, who make up a large proportion of pupils in country schools. Young children need adequate guidance and abundant drill in their work. This is possible only where the teacher is not overburdened with a great number of classes. It may easily happen, therefore, that a dollar spent for work in a one-teacher school, where all grades are represented, will not and can not bring as good returns educationally as one-half of that amount spent under better conditions in a consolidated school.

The consolidated school, with fewer grades for each teacher but with larger opportunities for drill in essentials, opens therefore an encouraging prospect for some relief from this lamentable weakness in average rural communities. In this particular alone the added cost of consolidation, if there be any, may and ought to increase the educational efficiency of the schools to such a degree as to more than warrant the extra expense. This is just one phase of the increased advantages which may be derived from consolidation. In addition, more ground can be covered in all subjects, more specialization can be demanded of the teachers, better hygienic conditions can be secured, better supervision will be possible, and particularly the civic life of the community will be quickened in many ways. Wherever consolidation has been wisely handled the people have usually kept their children in school longer and more regularly. Many consolidated schools have thus been able to bring to the rural communities the advantages of one or two years of secondary training, and in some places a full high-school course, which was impossible before consolidation. Thus in a certain consolidated school far out in the country four teachers are teaching in one building all the children that before consolidation had required six teachers and six buildings. In addition to all the usual subjects of the grades, there are in this central school, which is presided over by a vigorous well-educated

man, classes in Latin, French, geometry, algebra, physics, and general history. Literary societies have been established and, perhaps most interesting of all, one teacher has regular classes in music and is training the children in chorus singing. A new piano, a product of community enthusiasm, dignifies the assembly room. In such an environment as this, civic life is engendered and local patriotism is fostered.

In what has been said with reference to the advantages of the consolidated country school there is no desire to underestimate the value of the one-teacher school in the life of the community. With a good building, well arranged and well located, and with a well-paid teacher, the one-teacher school may serve its patrons and all the people within the district boundaries as well as a consolidated school. This excellence will depend on the initiative and wisdom of the teacher with whose rare leadership it is indispensably associated. Such a teacher is hard to find and hard to keep. But the consolidated school has opportunity for larger cooperation, and can more readily command the services of teachers who have proved themselves leaders.

One consolidated country school in Wake County, N. C., has a cotton patch on the school grounds, planted and cultivated by the pupils. From the proceeds of the sale of the cotton grown on the grounds, furnishings and equipment were purchased for the school. On the second floor of the building there is a small but convenient assembly room in which is a good piano purchased by funds from the school-garden products. In this school several high-school subjects are taught, literary societies have been organized, and community interest has been developed. It is worth a great deal more for a pupil to attend this school than a smaller school, even though the subjects taught be the same, for here he comes in contact with a larger neighborhood environment, enlarges his acquaintance, gets the help of better teachers, and is brought into healthy competition with more children of his age and general qualifications. The attitude of the neighborhood people toward this school and its work is interesting; they feel that it is their "big school" and that their children are honored in attending it.

Chapter XI.

SANITARY AND CONVENIENT WATER SUPPLY FOR COUNTRY SCHOOLS.

The two most important sanitary needs of country schools, outside of the school building and its requirements, are sanitary toilets and a safe and abundant water supply. The results of the investigations of water supply for country schools detailed in Chapter III, as well as the results of other similar inquiries, make it clear that the drinking water furnished the children is often impure and dangerous. The experience of most country-school teachers will bear out this statement.

Springs and farm wells are the usual sources of water supply. The springs are usually at some distance from the schoolhouse, and generally on lower ground. They are often poorly shielded from immediate contamination, and often receive the drainage from swampy ground, much-used pasture lands, or other defiled areas. In fact, they furnish merely slightly purified surface water. In general, they issue in open pools. These pools are depositories for leaves, dust, and dirt; insects find lodgment therein; various animals share in their use. Despite all these sources of pollution most people are brought up to believe that no water is so pure as "spring water." To be sure, there are many springs which furnish fairly pure water, and many others which if properly cared for would be safe, but the number of these is small in comparison with the number that are unsafe. Bacteriological and chemical examinations made at frequent intervals are the only safe guides. Possibly of all springs the small intermittent, dribbling ones are the most dangerous, for, getting their supply from the immediate surroundings, they discharge surface drainage which has had small opportunity for purification, either by filtration or by any other means. Springs in limestone regions are often subject to contamination by reason of the fact that the underground channels through which the water flows are often connected with sink holes partly filled with water and used as a water supply for cattle, hogs, and other domestic animals. Water from such sources may be carried long distances with limited opportunity for aeration, filtration, or purification of any kind.

All these facts, and others which might be mentioned, emphasize the need of caution in the use of springs as a source of water supply

for either country schools or country homes. Possibly the chief danger arises from the fact that any sort of spring is used and is generally poorly cared for. Further, many opportunities are afforded for pollution from dirty buckets and careless methods of transportation before the water is put into a sanitary receptacle in the schoolroom.

When farm wells are depended on for drinking water, the school authorities rarely have any direct control over them and rarely make any investigations to determine whether the water taken from them is wholesome and safe. Many farm wells are improperly cared for and receive infected surface drainage. The logical conclusion is that unsafe water from them is frequently supplied to school children. Just as in the case of springs from which water is carried in pails to the schools, the supply from such wells is open to serious objections. It is troublesome to have always at hand fresh water, and consequently children are often required to drink water which has stood for hours in an open bucket. Furthermore, dependence is placed on the boys to fetch the water, but they are not careful, and not infrequently return with a half pail of water more or less contaminated by their carelessness.

Whenever attempts are made to furnish a well for these schools the objection is usually urged that wells at schools, because they are used only about half the year, are soon in bad condition and are more dangerous than farm wells. There is truth in this contention, but it is owing largely to the fact that the wells are improperly located and improperly constructed in the beginning.

A dug well can be made a safe well, provided all the water flowing into it comes from a pure source; but it will cost more than many school officers are willing to appropriate to make it safe. A driven well can often be sunk to a much greater depth, thus insuring better filtration; it can be so cased-in as readily to cut off surface drainage; and it frequently costs less than a properly constructed dug well; hence the driven well should be preferred for country schools.

There are, however, many erroneous notions concerning the purity of the water from a driven well. There is no difference between the purity of the water from a driven well and of that from a properly guarded dug well of the same depth. If both are shallow and are so placed as to gather surface drainage from infected soil, they will be equally dangerous. The only advantage such a driven well would have over the dug well would arise from the fact that, unless the dug well were securely covered and the casing made watertight to the lowest water line, surface infiltration into the driven well would be accomplished more slowly and more opportunity would be offered for purification. The main source of supply would be the same in each case.

If a driven well is forced through an impervious stratum of hard clay or other material into a deep-lying water-bearing stratum which has no direct connection with the surface of the locality, and if the boring about the pipe where it is driven through the impervious stratum is securely sealed against infiltration from above or pressure from below, local insanitary conditions would have very little or nothing to do with the purity of the water obtained. The problem then would be to determine if possible the source from which the deep-lying water-bearing stratum gathered its supply. This might be from a long distance. A study of the geologic formation of the district would be necessary to determine where such water entered, for it must be remembered that all ground waters, whether near the surface or deep seated, were once surface waters and came from rains or snows. A flowing or artesian well may be dependent on surface connections hundreds of miles distant.

Sometimes, especially in mineral regions, a deep driven well will draw its supply from highly mineralized waters, and hence may furnish water disagreeable to the taste and even dangerous for drinking. Some mineral waters are wholesome and healthful, but it is always safe to know the chemical constituents of suspected water before using it freely.

Ordinarily a driven well with a force pump is the safest well, other things being equal, that can be provided either at the farm home or at the country schoolhouse. Of course, it is not always possible to supply this kind of well on account of the geologic formation. But wherever a good water supply can be reached at a good depth, the driven well is safer, because there is less opportunity for defilement.

When a driven well is properly placed and is sufficiently deep to warrant a supply of pure water, a drinking fountain can be attached to the pump, as indicated in figure 37. This will necessitate a good cement foundation about the pump and about the drinking fountain, ready means of carrying away the waste water, and such an attachment of the fountain to the pump that the pressure tank will be below the freezing line and also deep enough to keep the water cool in the summer. Plate 43 represents such a fountain in use. If the well is a driven one, an excavation sufficiently deep to place the tank and its connections well below the surface of the ground may be made, and the attachment be made to the pump in the same fashion as shown in the cut.¹

If a large pressure tank were substituted for the small one shown in figure 37, not only could a drinking fountain be supplied, but lavatories, flush toilets, baths, laboratories, and a faucet for hose as pro-

¹ Thanks are due to the manufacturer and to State Supt. Francis G. Blair, of Illinois, for the privilege of reproducing these cuts.

The air pressure in the tank forces the water to bubble up through the bubbling cup. In the course of the process the waste water escapes through the outer pipe at R and out through the pipe T. It will be necessary to make these waste pipes water-tight, so that none of the waste water would fall back into the well. The waste pipe shown at T should be carried to a safe distance from the well, so as to prevent any possible infiltration.

The same care should be exercised in carrying away drainage from a driven well as from an open well, though, of course, the danger of rapid infiltration is not so great with the former, unless the wall casing and covering of the open well are made impervious as far down as the lowest water line.

Experience has proved that individual drinking cups do not satisfy the demands for good sanitation at schoolhouses and that the only sanitary and convenient contrivance is some form of drinking fountain.

It is a common habit where individual cups are used, for one pupil to exchange his cup with another pupil and to feel it a sort of honor to have others drink from his cup. The children often carry their cups in their pockets, or expose them so as to receive the dust from the schoolroom, and in many ways they offer opportunity for contamination. Theoretically, individual cups would seem to satisfy all requirements, but in practice they do not, simply because neither the children nor the teachers, however careful they may be, can be certain that exchanges are not made and that the cups are kept in a clean condition.

There is a simple form of fountain not dependent upon running water which is usable in country schools. This consists of a receptacle to hold a supply of water; the water is thrown up through the bubbling cup by the force of gravity, the waste running into the bucket shown below. There are several adaptations of this kind of fountain. The chief requirements are some means of keeping the water cool, a ready means of catching the waste water, a tight cover to prevent the entrance of dust and dirt, and a possible adjustment of the bubbling cup to the various heights of the children. Naturally the water served in such receptacles must be taken from a pure source and be kept from contamination. It is possible, with this form of fountain, to boil and cool the water before it is introduced into the receptacle and thus to insure its safety. The practice of putting lumps of ice directly into the water is questionable, unless it is certain that the ice has been made from pure water.

In practice these fountains are not always kept in sanitary condition, not being thoroughly and satisfactorily cleaned often enough. Despite everything done, a sediment from the water and possibly

also vegetable matter will gather on the sides of the receptacle, and make it insanitary.

Fig. 38 represents a well incased with large glazed sewer tile and dug in a place where the dip of the impervious strata is clearly marked. Under such conditions it is evident that one side of this well needs more careful protection than the other. If an unpro-

tratum

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FIG. 38.—Well incased with glazed sewer tile.

tected privy were situated on the side where the impervious strata lift toward the surface, there would be danger of infiltration, even if it were placed at a comparatively great distance, whereas, if it were placed at a reasonable distance on the other side, the danger would be small. This cut, of course, is not meant to represent usual conditions, but it does represent conditions met with at times in various parts of the country.

Chapter XII.

SANITARY PRIVIES FOR RURAL SCHOOLS.

From the point of view of decency and sanitation the toilet facilities of great numbers of our country schools and country homes are bad. This statement is based on data obtained from the teachers of two counties of each of 18 States representing as nearly as possible typical conditions, from the report of a survey of farmhouses made by the various State agents of the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, from a report of a school sanitary inspection of 3,572 district schools by the Pennsylvania State Department of Health, from an investigation made under the direction of the joint committee of the American Medical Association and the National Council of Education, and from data gathered by various other more or less local surveys.

By reference to Chapter III of this bulletin it will be seen that in 631, out of 1,232 schools reporting, the toilets were adjudged insanitary, and that these 1,232 schools were probably typical of the whole country. The tabulations made of the results of the Pennsylvania survey make it clear that at least 50 per cent of the privies of the 3,572 schools inspected were in an insanitary condition. The Rockefeller sanitary commission found, as the result of a survey of 103,346 farmhouses in 11 Southern States, that 50,637 of them have no privies at all. The report does not make specific mention of the sanitary condition of the privies that were observed, but it is probable that a large majority of them were and are insanitary.

More than a hundred photographs of both exteriors and interiors of rural school toilets, and careful notes made on the ground by the field agent of the joint committee of the National Council of Education and the American Medical Association make it clear that less than 5 per cent of the toilets of the 109 rural schools examined in Connecticut, New York, Vermont, Maryland, and New Jersey¹ are sanitary or even passably decent. One privy, typical of many, was fairly new; and the schoolhouse was not old. The privy was within 3 feet of the schoolhouse. When examined in the summer of 1913 by the field agent of the joint committee, the privy was used by both boys and girls; it had no partition; the door had no lock. Eleven obscene

¹ See p. 29.

pictures were found on the inside. The feces fell on the surface of the ground and were exposed to flies; there was an offensive odor; and apparently no attempt was made to clean, deodorize, or disinfect the building. Many worse privies than this were found. By most teachers and officers of rural schools these data will not be questioned, because all who have worked in country schools and are familiar with country life know by experience that the sanitary conditions ordinarily prevailing at country schools and farmhouses are very bad. Those who are engaged in the attempt to eradicate hookworm disease from our country have concluded that, although they may relieve and cure great numbers of people by the proper use of thymol, their work will never end unless sanitary toilets on the farm and at the school are constructed; for as long as the soil about homes and school buildings is continually contaminated, these depleting parasites will continue to infect and reinfect the children.

But this is not all. We know that typhoid fever is a germ disease, and that insanitary toilets, through the agency of flies and infected water, are among the chief means of spreading this dangerous disease, in cold as well as in warm climates. Proof has been brought forward again and again to show that where absolute cleanliness in this regard prevails typhoid fever generally disappears. Doubtless other diseases also have their origin in the lack of sanitary privies, but it is surely enough for our purpose to know that this lack bears to these two dangerous diseases the close relationship of cause and effect. Considered merely from the economic point of view, typhoid fever costs enough each year to go a long way toward paying for the construction of sanitary and decent toilets at every farm home.

Aside from the danger to health, common decency demands relief. Possibly there is no better test of the real sensibility of a people than that of cleanliness. Wherever you continually find filthy gardens, nasty barnyards, and unwholesome school conditions, you are certain to find crude and uncouth people. If country life is ever to surpass the best of city life in comfort and refinement, and there is no fundamental reason why it should not, these conditions must be changed, and country school teachers must play a large part in bringing about this change. Country schools must teach the truths of sanitation, and they must also set the example of building sanitary toilets and of keeping them in good condition. They must complete their teaching through demonstration of theory by fact, through cooperative activity with the people.

The first question for practical consideration is this: What are the essential requirements of sanitary toilets for country schools?

The first requirement is that the toilets be convenient and easily accessible to the children, so that in cold or inclement weather there

shall be attached to them no thought of exposure and no feeling of reluctance.

The location of toilets in country schools is a troublesome matter. If they are detached from the school building, they must ordinarily be removed some distance for the sake of both propriety and wholesomeness. But to locate these necessities outside of the school building is to incur the difficulties connected with inconvenience, bad weather, and the dangers of neglect, and to invite indecent liberties of various sorts. Even when washout or flush toilets are located outside, it is difficult to prevent defilement, rough usage, and unchaste, if not immoral, practices in connection with their use. Although all these results do not necessarily follow outside location, the most rigid supervision is requisite to prevent these outbuildings from becoming insanitary and loathsome.

When dry-vault toilets or those with septic tanks are used, it is best to locate them at a distance from the school building. As these are the only forms of sanitary toilets that the great majority of rural schools will be able to supply, the twofold problem of their location and construction must be considered carefully. The small size of the country school lot makes the problem more difficult. The usual half-acre lot can not well be divided by a hedge or fence into two equal parts, for such division would destroy all possibility of a fairly good playground. On the other hand, unless some screen is introduced, the lack of privacy in the use of toilets during the intermission periods, when they are most used, is serious and indelicate, to say the least. Such lack of privacy often causes much reluctance, annoyance, and distress.

The usual locations selected for these toilets are the two opposite corners in the rear of the school lot. Under no condition is it advisable to make a single outbuilding, using one half for the boys, the other half for the girls. The buildings must be well separated. Screens of vines can be used to great advantage in most climates in summer, but as the main part of the school term is in the winter season, in cold climates evergreen shrubs so planted as to shield the buildings and to inclose the walks leading to them are more helpful. In the Southern States the English ivy stands the winters very well and is an ideal vine for covering such buildings and shielding the approaches to them.

Basements afford the most economical and on the whole the best location within the buildings for flush toilets. These can be connected with sewers or with septic tanks elsewhere described.

The second requirement for outside sanitary privies is to construct them in such a manner that the soil around and underneath the school building shall be kept free from contamination. This precaution is necessary on small lots; especially where a well furnishes

drinking water. The ordinary privy set over an excavation in the soil that is not water-tight is dangerous, because of possible contamination of the water supply. Many rules have been given for regulating the distance from the well at which such cesspools may be located; but, obviously, no safe general rule can be formulated, for the character of the formation, the kind of soil, and the dip of the impervious strata will in all probability be different in each school lot. Sandy loam, with an impervious substratum dipping toward the well, would allow the passage of pollution through a long distance, especially in rainy weather. On the other hand, a clay soil, with an impervious stratum dipping in the opposite direction, might be safe, as far as infiltration is concerned, at a comparatively short distance from the well. Unless absolute assurance can be given that there is no danger of infiltration and that proper protection in every way will be afforded, a cesspool should never be allowed on the ordinary country school lot.

In order to emphasize the seriousness of the cesspool form of toilet at country schools, the following extract from a recent letter by Dr. W. J. Kernachan, health officer of Lauderdale County, Ala., is given:

In making a health survey of the rural school children of this county recently, I collected a sample of the water supplied to each school. An examination of these specimens by the State pathologist reveals the fact that 19 out of the 20 collected contained fecal matter.

Dr. Kernachan does not state the source of the water supply, whether from house wells, springs, or wells on school lots. But it is evident that either at the schools or at the farm homes, or at both, the most elementary principles of sanitation are neglected. Open cesspools or even worse conditions must prevail to bring about such a condition of the water supply.

The discussions that follow, and the figures introduced, have been prepared with the hope that they will afford country school officials and country people in general some suggestions in regard to the construction of more sanitary toilets, both at schools and at farm homes. No attempt has been made to illustrate all the possible forms of the sanitary privy, but a sufficient number of cuts and descriptions have been introduced to meet the varied conditions found in different parts of our country. Details with reference to plans, specifications, and cost are not given. Conditions are so diverse, and the cost of materials and labor varies so much in different parts of the country, that such details would not be of general value. Most country carpenters under direction of teachers or school officials can carry out these suggestions or adapt them to local conditions.

The accompanying description of a form of dry privy, and the cut represented by figure 39, are taken from the leaflets sent out by the superintendent of public instruction of Virginia:

Two dry closets shall be constructed similar to that indicated. These closets shall be located at or near the opposite corners of the rear line of the school lot, and should be at least 150 feet from the school building. Proper construction is of the greatest importance. The house should be well built, so as to be comfortable in winter, and have a sound roof so that the interior will always be dry. A house of this size should not have more than two seats. These should have tight-fitting hinged covers that would stay down, except when in use. In a corner of the house there should be a bar-

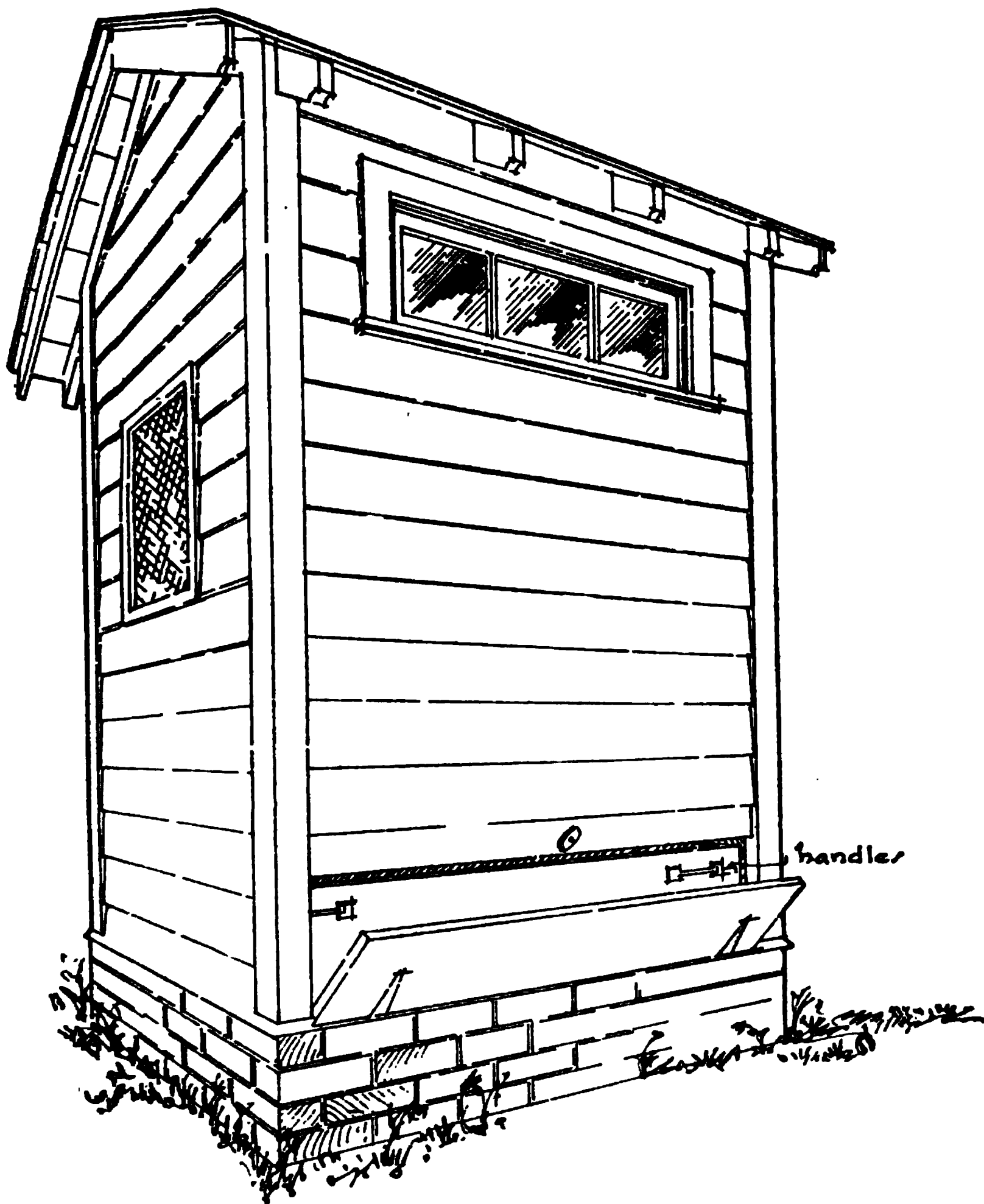


FIG. 39.—Form of dry privy recommended by Virginia State department of public instruction.

rel of powdered surface soil that has been dried in the sun, and a scoop holding about a pint. The door should fit tightly, and any windows or apertures should be screened with fine wire so as to absolutely exclude flies. The construction under the seat may be of several kinds, any of which will be safe, provided a few points are observed.

The "night soil" must be kept in some receptacle which can be kept dry and off the ground, and so constructed that it can be easily removed and cleaned. The contents of the receptacle must be protected against flies. These are the important

points. A box made of sound, heavy timber, well braced, and tight enough to prevent leakage, will be good. It should be set close under the seat, and the opening back of it protected by a door which closes tightly enough to exclude flies. This is shown in the accompanying drawing. The floor of the box should be covered with about 4 inches of dry earth before it is used. Each person using the closet should empty on the contents about a pint of the dried earth. If the earth is used in abundance, the material will in a short time become relatively inoffensive. When not more than half full, the box should be placed on a wagon and moved to some distant field and the contents be dumped into a hole and covered with earth.

The chief difficulty with this arrangement arises from the likelihood that the box will not be emptied often enough. If the box were set on runners, sled fashion, handling would be easier and more expeditious. In this case the box should be made particularly strong. From the sanitary point of view the chief requisites are the use of plenty of dust, complete exclusion of flies, and safe disposal of the contents of the box.

One seat should be about 11 inches high, to accommodate the smaller children, the other about 15 inches high to accommodate the larger pupils.

The district school officers must hire some one to remove and empty this box at regular intervals, without the necessity of the teacher calling his attention to the need of so doing. The teacher should inspect these buildings often and should see that all sanitary requirements are regularly carried out.

Figure 40 represents a boys' double toilet with partition between the two seats. The seats are of different heights; one to accommodate the smaller boys, the other the larger. Each stall is 4 feet wide, 5 feet deep, and $7\frac{1}{2}$ feet from floor to a line on a level with the eaves. Doors are to be $2\frac{1}{2}$ feet wide and $6\frac{1}{2}$ feet high, swinging out. The seat boxes are each to be 2 feet in length from partition to dust bin, one $14\frac{1}{2}$ inches high, the other 11 inches. The width of the seat board should be 15 inches. The dust bins should be $3\frac{1}{2}$ feet and $2\frac{1}{2}$ feet high, respectively; 2 feet wide from seat box to outer wall, and 16 inches from front to back. The ventilators above the doors are set to be sheltered by the wide eaves from driving rains and are to be carefully covered with a good quality of fine wire screen. The high windows should be fastened and are not to be opened. The floor and the roof must be made tight, both to protect against inclement weather and to keep out flies. The lids of the seats should close automatically after use. The doors should be well made and hung with strong hinges to prevent sagging. It is always well to set the doors in such a way that they will close of their own weight. Good locks should be used instead of the ordinary hooks generally used on the doors of such outhouses. This will prevent the doors from being left open for the entrance of flies and the privies from being used by tramps when school is not in session. Ventilators should be

set in the rear as in front. Either buckets or a dry pit, like that in figure 41, should be used to receive the night soil. The height of the dust bins will prevent the boys from using them as urinals. Those in the girls' building may be made lower, if desirable. Some practicable scoop should be supplied for each bin. If preferable, an opening at the bottom of the bin can be made for taking out the dust,

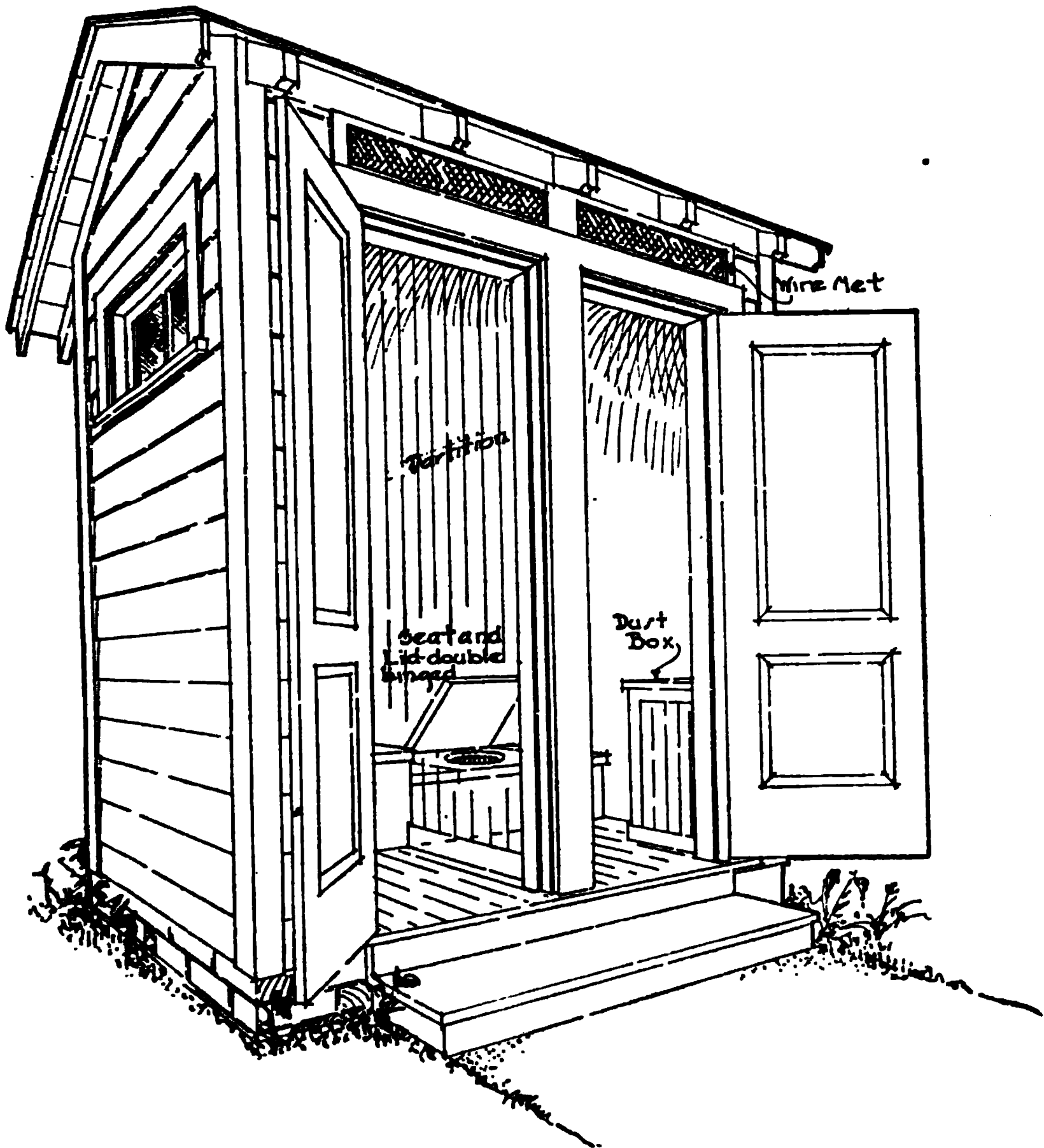


FIG. 40.—Boys' double toilet, with partition between the seats.

and a lid be fastened over the top. This would help to prevent defilements of any sort.

The form of dry toilet shown in figure 41 will be satisfactory and sanitary only when sufficient dry loam dust is used to absorb all the moisture and to neutralize all odors and septic matter introduced. It will be observed that the pit is to be made of brick and concrete and hence will be practically water tight, to prevent leakage and also seepage from the ground. This form requires the selection of

sloping ground upon which to build the privy, otherwise it would be difficult to remove the night soil from the pit. The lids to the seats should be made to fit closely and to close automatically when the seats are not in use. The lid closing the opening of the pit in

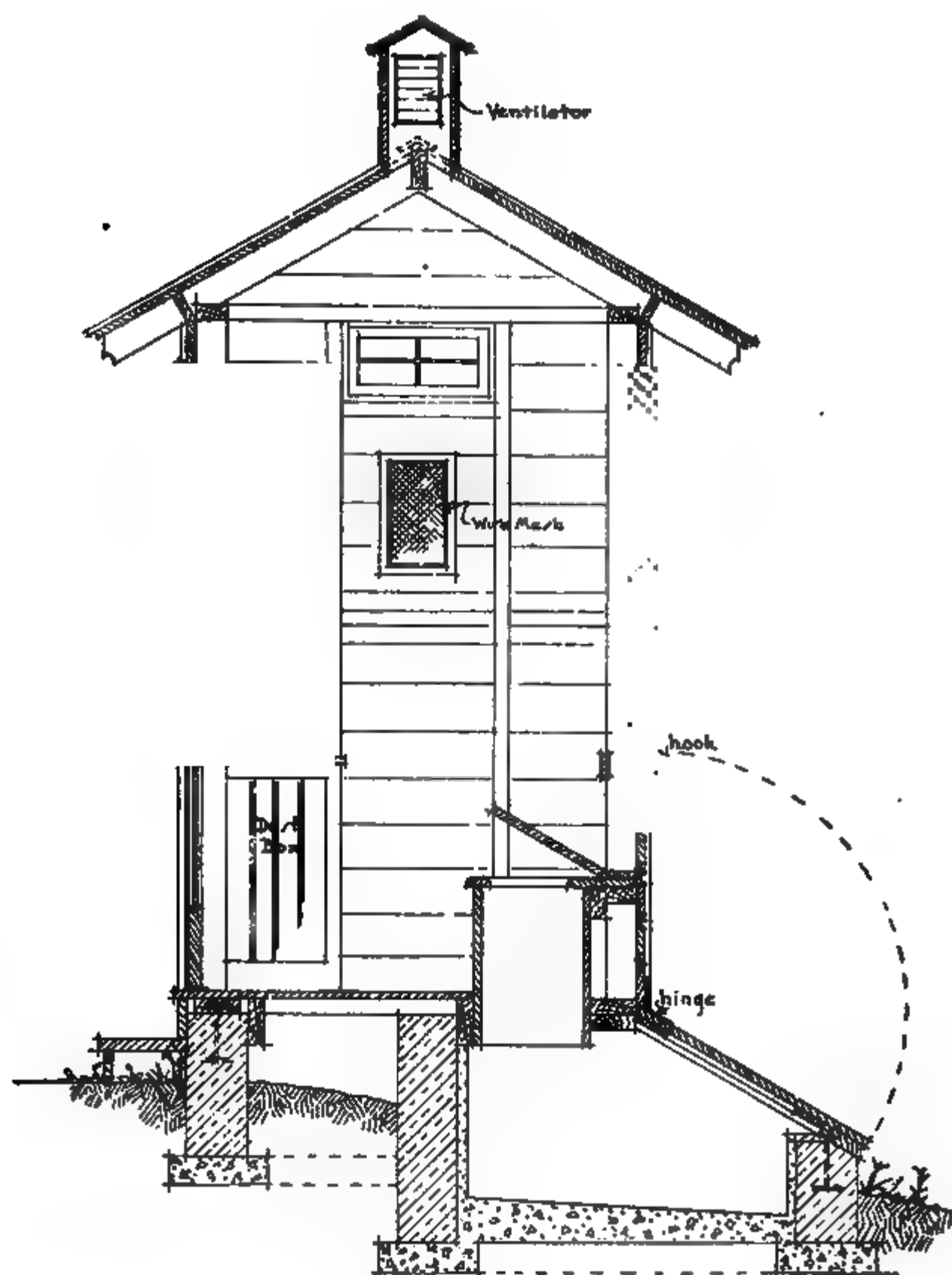


FIG. 41.—Dry toilet with pit.

the rear should likewise be carefully made and adjusted, in order to prevent leakage from beating rains and also to prevent the entrance of flies. The pit should be cleaned as frequently as safety and decency dictate. Cleaning may be accomplished in this form of toilet by shoveling the night soil into a box placed in a wagon and

then carting it to a safe distance in some neighboring field and burying it. The night soil should never be deposited in a field where vegetables are grown, and always at a safe distance from a well or spring.

A well-built bin at least 3 feet high should be located inside the toilet for the purpose of storing a good quantity of dust where it is readily available. Sand should not be used. Dusty loam from dirt roads is excellent. In default of this, well-pulverized dry soil taken from a neighboring field will serve. Some objection might be raised to the height of the bin, on the ground that the smaller children could not readily and easily get at the dust. Although this height may be open to this objection, it will tend to prevent in the boys' privy a more serious difficulty, for if a lower bin is put in, some of the boys will use it for a urinal; furthermore, an outflow for the dust can be made near the bottom of the bin and the lid fastened. Then, too, this height will make it possible to provide more room for storage without encroaching too much on the floor space. Furthermore, while it is useful to instruct all the children in this method of sanitation and to urge them to use the dust without fail, children will forget, and the teacher should see that dust is applied daily. Otherwise insanitary conditions will prevail. The school officers of the district should be charged with the duty of seeing that the pit is cleaned as often as necessary, the teacher reporting to them.

If two seats are made in each room, one should be about 11 inches and the other about 15 inches high. The seats and lids should be kept clean, and sanitary toilet paper should be provided.

Figure 43 represents a slightly different form of dry toilet with a box for dust in the end, one seat 15 inches high for the larger boys, one 11 inches high for the smaller boys, and an open-air urinal trough delivering into the vault. The urinal trough is shown 14 inches above the ground near the outlet and 26 inches at the upper end. This arrangement will give good drainage, as well as accommodate both the smaller and the larger boys.

The partition between the seats will serve to give more privacy. The door is made to swing either way; but it should be provided with an interior latch, and a lock on the outside so that when school is not in session the building could be kept locked to prevent it from being used by tramps or other passers-by.

In this as in all other forms of dry toilets, the two essentials for sanitation are the regular use of dust to cover excreta and the safe disposal of the refuse. Small openings covered with fine wire screen should be made for ventilation. These can be introduced in the front, near the roof. Every precaution should be taken to exclude flies and

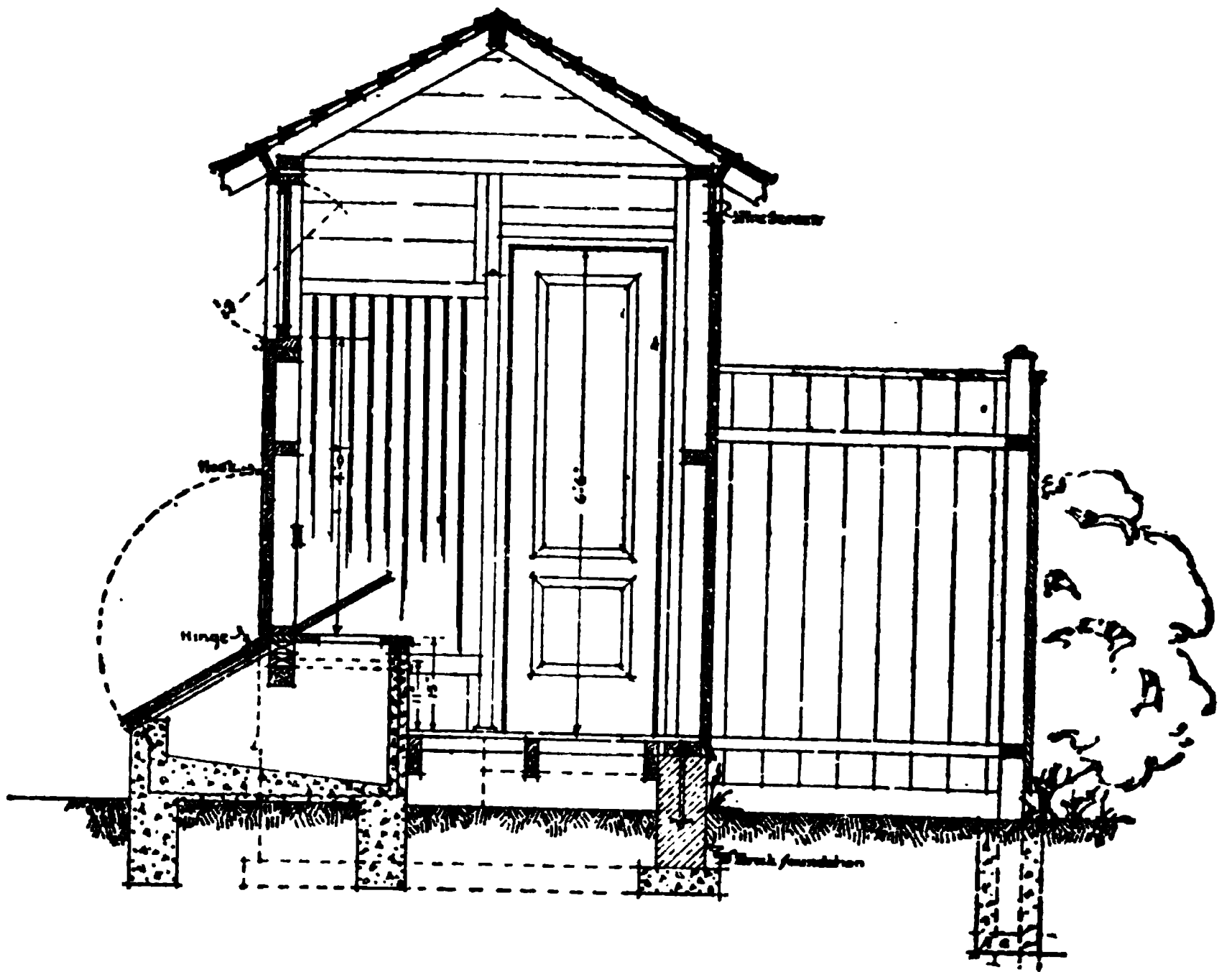


FIG. 42.

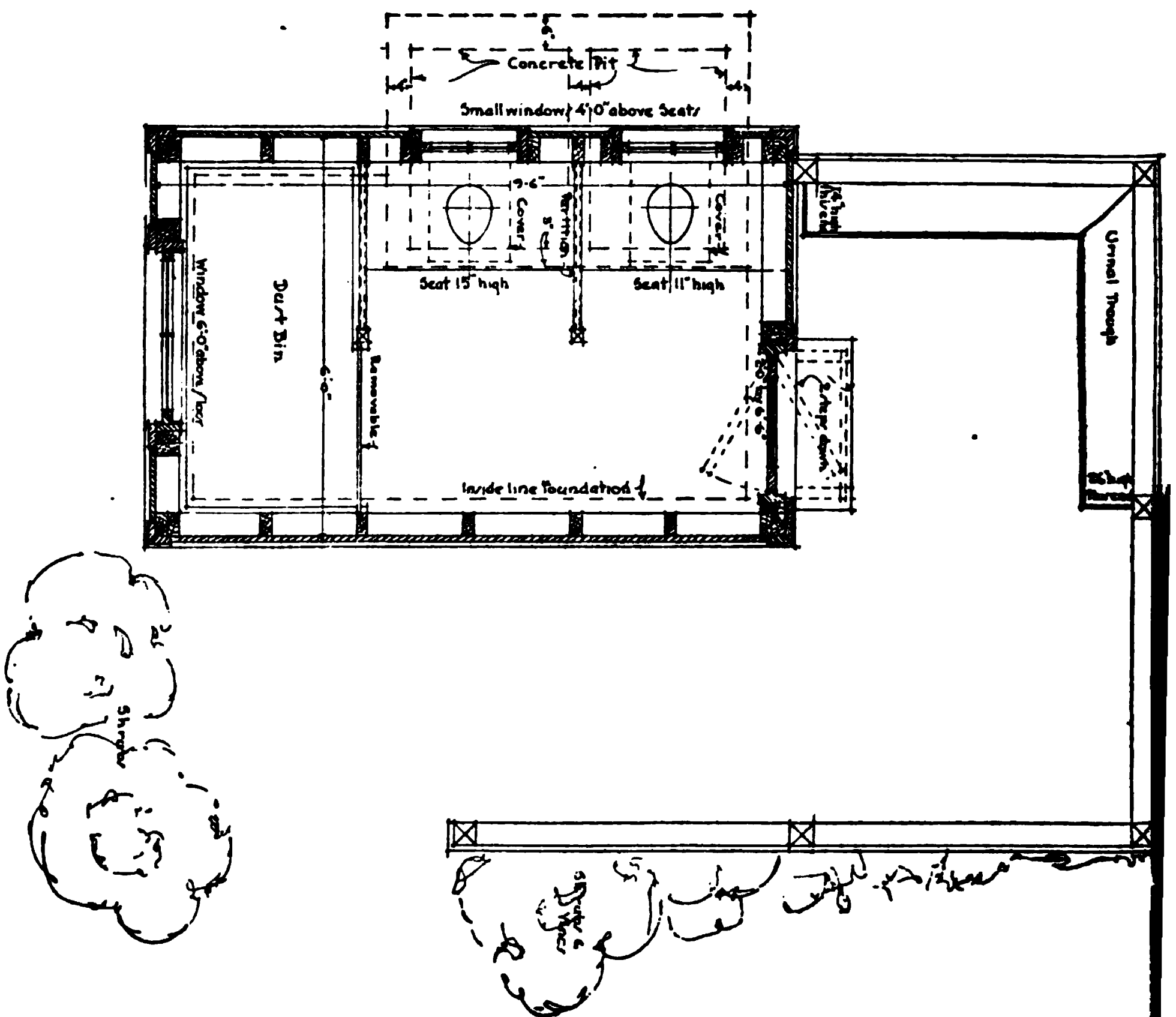


FIG. 43.—Dry toilet with pit, and open-air urinal trough.

mosquitoes. The lids carrying the seats should be so placed as to close automatically.

Figure 44 suggests a form of dry toilet with buckets for catching the night soil, thus making it necessary to dispose of the collected material oftener and also making it possible to do this more expedi-

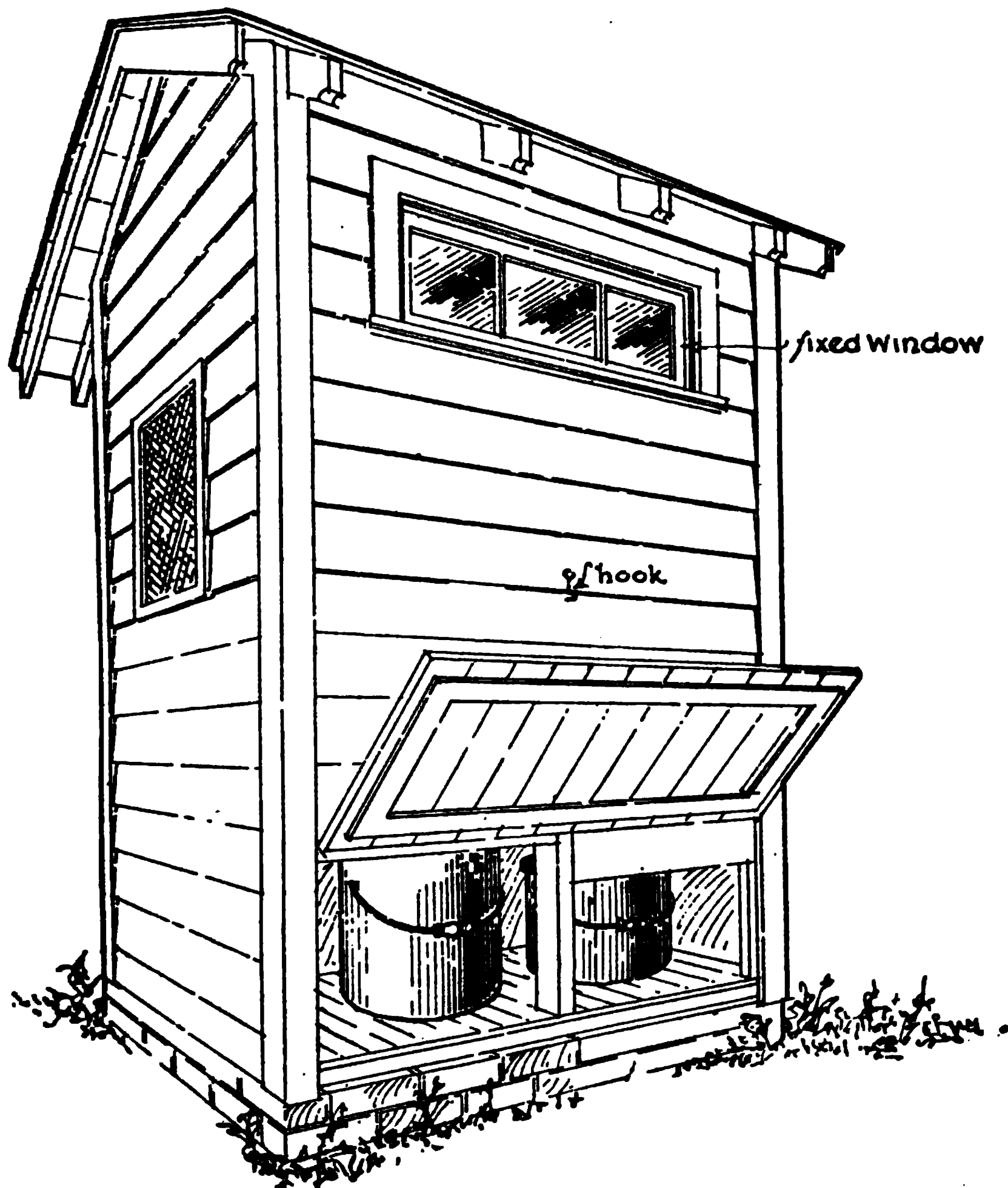


FIG 44.—Dry toilet with buckets.

tiously. Those who attempt to follow these suggestions should be sure that the buckets are large enough and high enough to reach sufficiently close to the seat to prevent defilement.

These buckets should be removed and well cleaned before they are completely filled, and then 2 inches of dry loam dust should be thrown into them before they are replaced for use.

One of the buckets is about 4 inches shorter than the other. This fact, of course, will suggest a corresponding difference in the levels of the two seats, the higher one being approximately 15 inches from the floor, the other about 11 inches. The lids of the seats should be made to fit and to close automatically. The trapdoor in the rear should

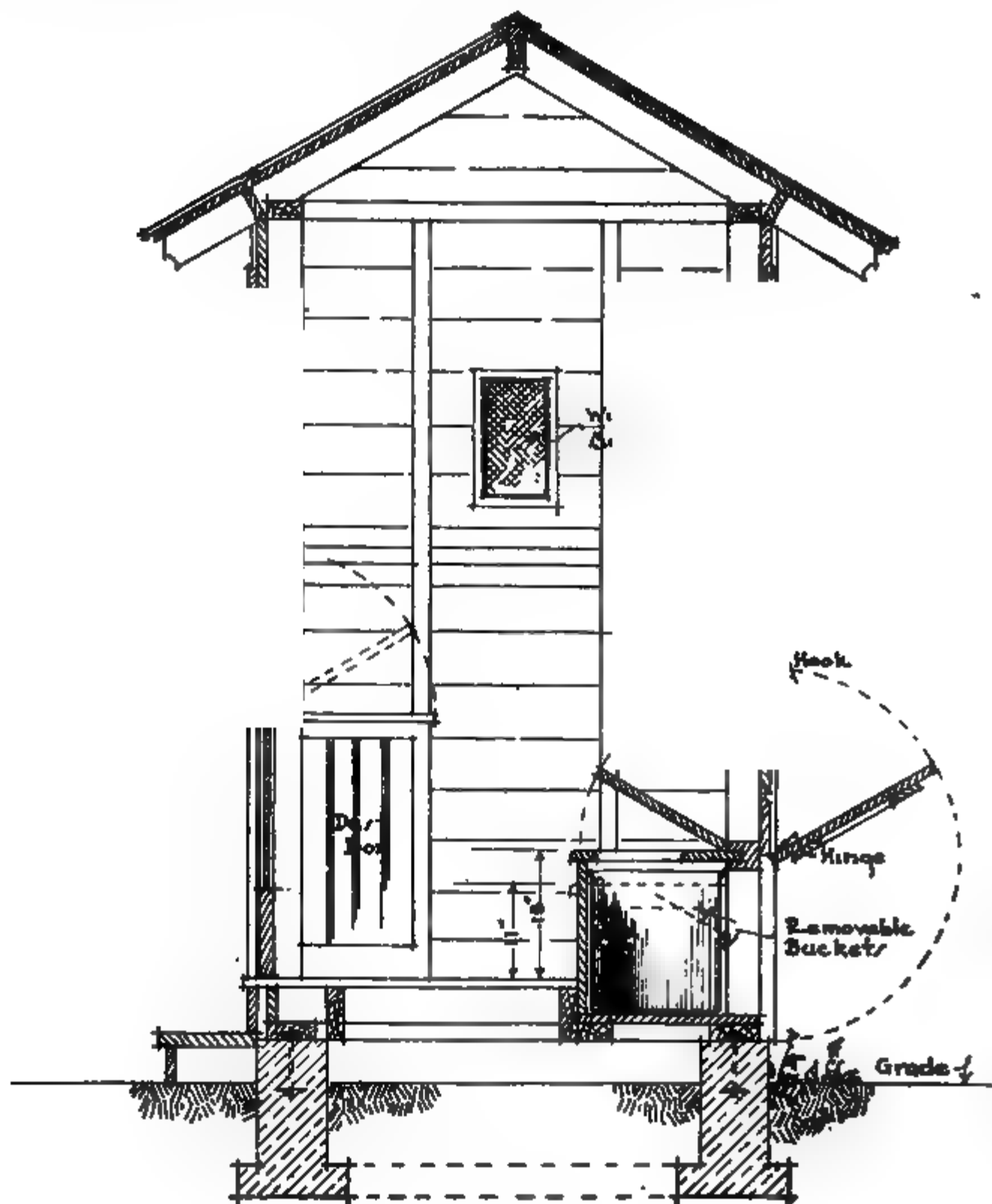


FIG. 45.—Section drawing of privy shown in fig. 44.

be kept securely fastened and be opened only when the buckets are to be emptied. The whole structure should be neatly built and carefully finished, dust bins included, as described in connection with figure 41. The drawing is meant to represent a building $7\frac{1}{2}$ feet high at the eave lines, 5 feet wide and 8 feet long, outside measurement.

Separate stalls should be provided in this and other detached buildings of a similar type, so that one side may be used by the small boys, the other side by the larger boys. The same suggestion should be followed for all detached buildings for girls.

The form of toilet known as the "L. R. S. privy" was devised by Dr. Lumsden, Dr. Roberts, and Dr. Stiles of the United States Public Health Service. One of the simplest forms of it is represented by figure 46. This form consists of a water-tight barrel with seat arrangement fitted over the top and a connecting T pipe leading from the barrel to an outside effluent tank made of a bucket or a barrel and securely covered to prevent mosquitoes and flies from entering it.

The house covering this toilet will leave the small tank on the outside, which will be adjusted to the floor line as shown in the cut. This will necessitate placing the barrel in a pit or sinking it in the ground so that the top of it will be flush with the floor of the toilet building. It is important that the building be made proof against flies and mosquitoes and that it receive sufficient sunlight to keep it wholesome. The theory of the action of this toilet is exactly the same as that in any septic-tank disposal system. In the beginning the barrel should be filled with water up to the level of the outflow, then, to aid the action of the liquefying bacteria, a small quantity of well-rotted stable manure should be thrown into the water. The action of bacteria upon the excrement is to liquefy it, and, as the water line in the barrel rises, this liquid will flow out into the outside tank, which can be carted off and emptied in a safe place. The simple form shown in this figure makes it possible for this toilet to be constructed at a smaller expense than any other form of septic tank. It, however, necessitates the removal of the outside effluent tank and discharging the material. Chemicals which would destroy the liquefying bacteria should not be used.

Figure 47 represents the same form of privy built in concrete so as to be permanent. In this form, however, instead of being movable the effluent tank is stationary, and the fluid must be pumped or drawn out and carried away in separate vessels.

There is no reason why this form of toilet should not be connected with subsurface drains, like the other septic-tank disposals mentioned further on. If the ground upon which the toilet is constructed is properly sloping and the soil sufficiently porous to permit the proper purification of the subsurface through which the drain tiles are spread, then the necessity of carrying away the liquid material would be obviated. Experiments made with this form of toilet prove fairly conclusively that the fecal matter is liquefied; that there is comparatively little odor about the building; that if the structure is carefully built both above and below ground it may be made safe

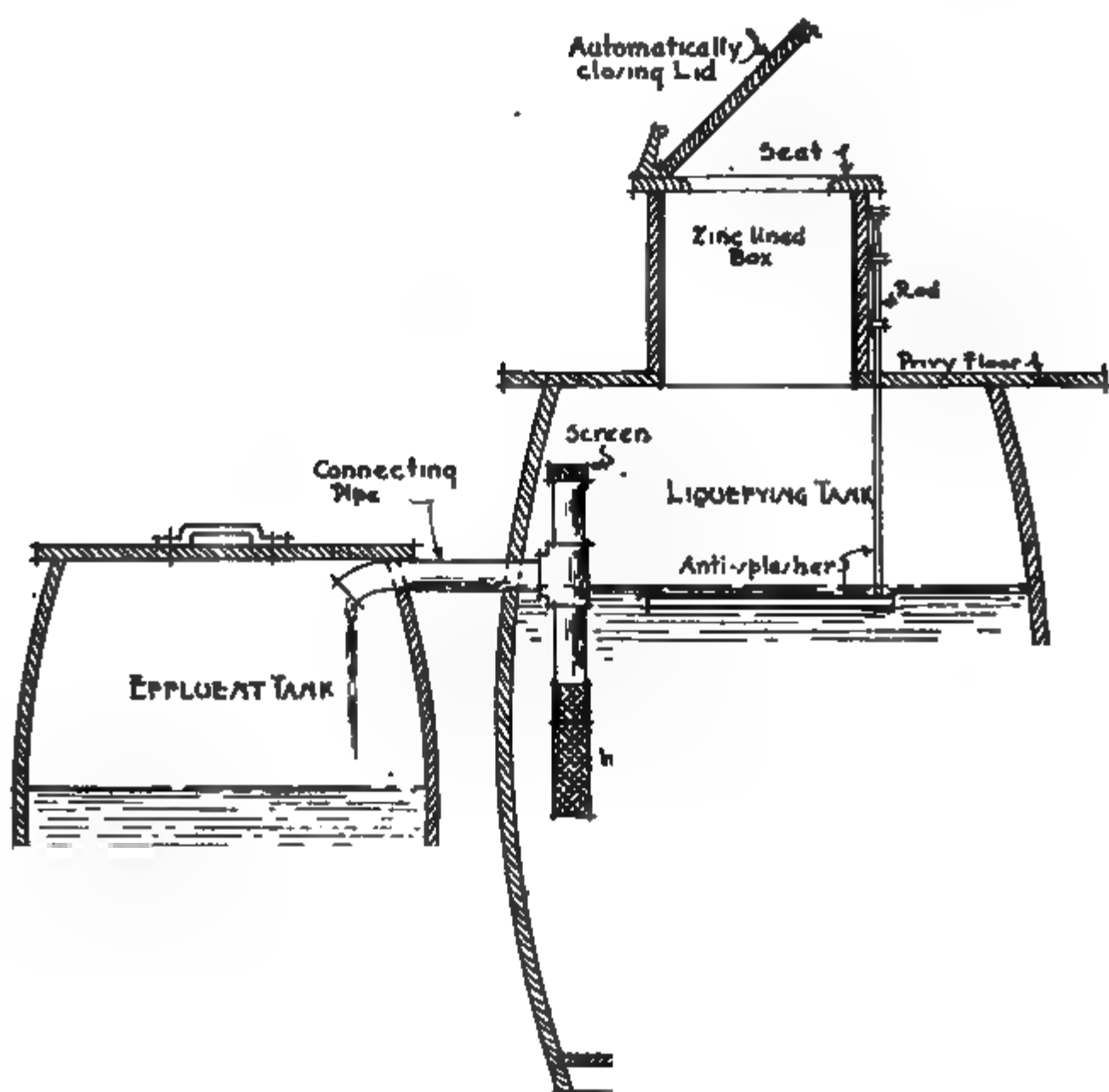
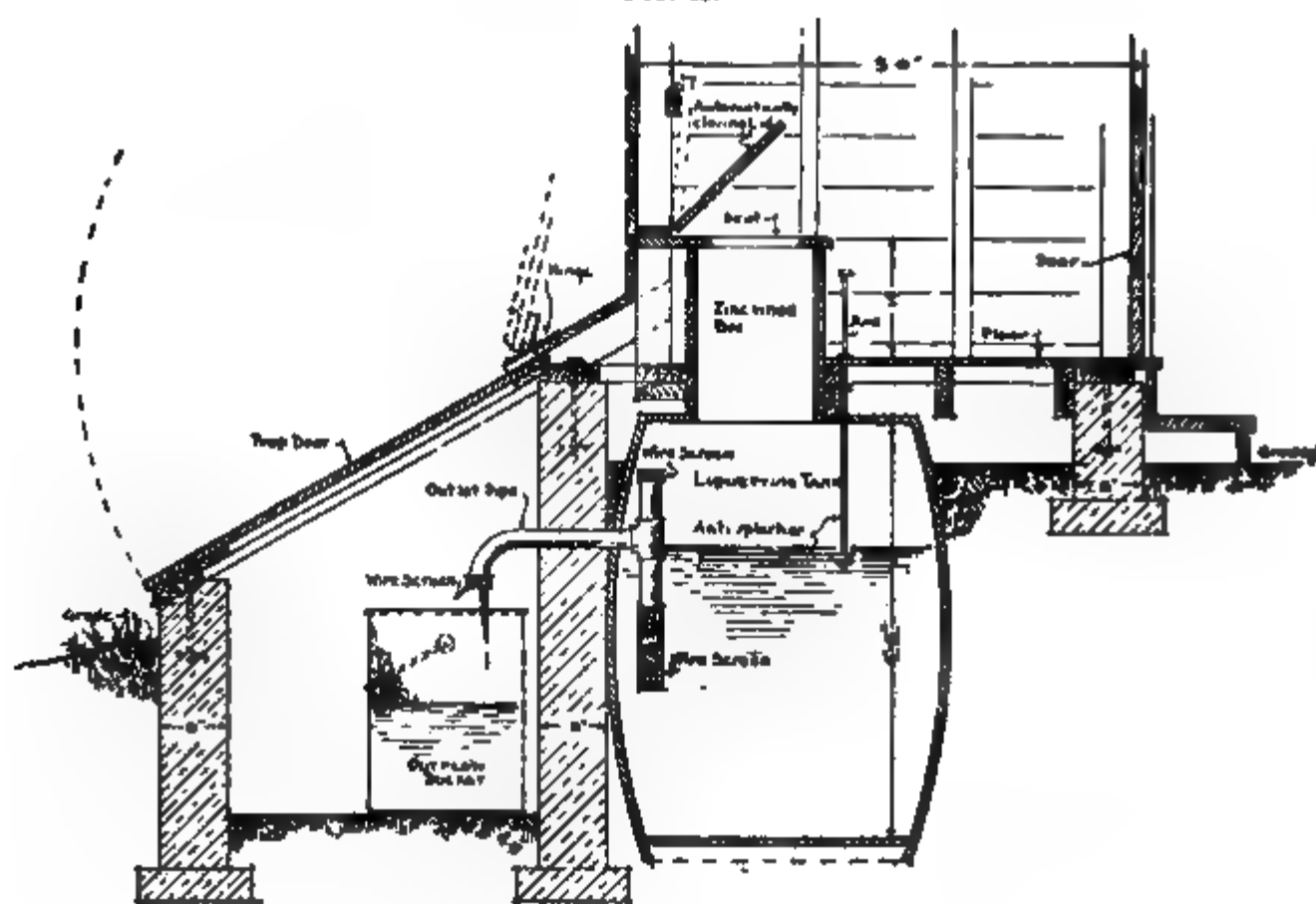


FIG. 46.



AN ADAPTATION OF THE L.R.S. PRIVY
 FIG. 47.—Forms of the L. R. S. privy.

from flies and mosquitoes; and that the labor of cleansing is slight compared with that of any of the dry-toilet systems.¹

The success of any form of septic-tank disposal depends to a large degree on the slope of the ground carrying the drain tiles, the nature of the soil, and the extent of ground through which the drain tiles may be carried. If the ground is nearly level, the drain tiles must of necessity be placed too deep in the ground to insure rapid absorption and purification of the liquid. On sloping ground it is an easy matter to bring the tiles within 18 inches of the surface, or at most

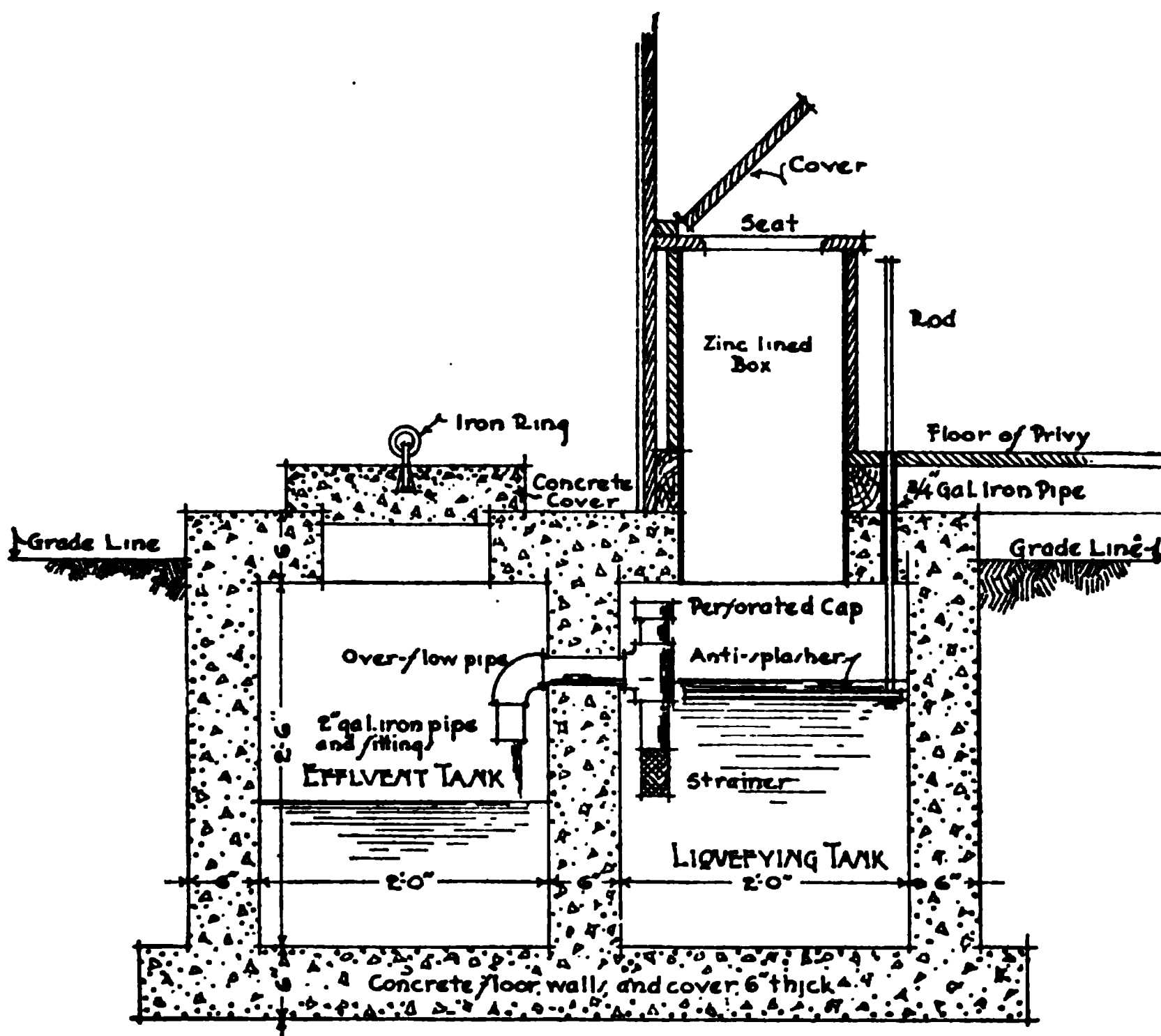


FIG. 48.—Section through concrete tanks and seat; L. R. S. method.

just below the freezing line. Thus located, the tiles discharge the liquid in reach of the active bacteria, and the absorption and evaporation of the liquid thus discharged is increased. Moreover, if a few trees or shrubs are present in the absorption field, but far enough away to prevent the rootlets from choking the tiles, the capacity of the ground to care for the outflow will in general be increased. Naturally, a wet absorption field should not be chosen, for good drainage and rapid drying are essential. The drain tiles should not be laid in ditches with too much fall, for the effluent from the tank would rush

¹ Thanks are due Dr. John A. Ferrell for the reproduction of these cuts from his bulletin on the sanitary privy, issued by the North Carolina Board of Health.

too quickly to the lower ends of the tiles and hence overwork those parts of the absorption field. The fall should be such as to equalize as nearly as possible the demands on various parts of the absorption field.

No one can be sure that material laden with typhoid germs will be rendered inert by a septic tank of this sort, but if the absorption field

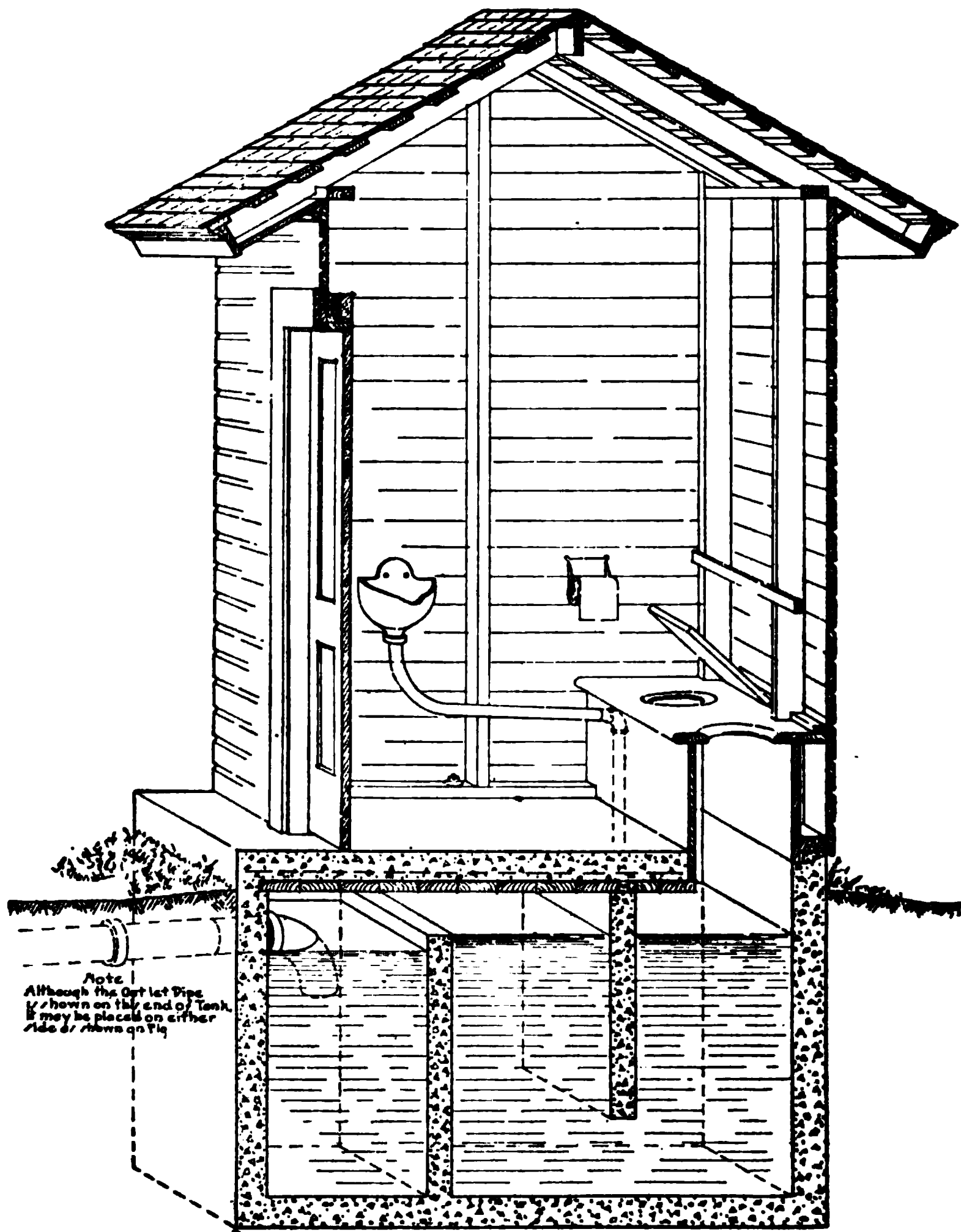


FIG. 49.—Vertical section of tank and house. Kentucky sanitary privy.

is of the right sort and is large enough and if the subdrainage is carefully guarded, it is probable that there is less chance for infection than where sewers are used which open into small streams and infect water for long distances. This statement would not hold true if

reach of all communities. Attention is called to the urinal here introduced. As has been said elsewhere, the chief difficulty with the ordinary seat arrangement for boys' toilets arises from the lack of urinals, and as a consequence the boys are not careful to lift the under lid, and hence are almost sure to defile the seat itself. Consequently, they will next stand on the seat, and still more serious defilement ensues. Photographs of the interior of more than a hundred country school privies exhibit these defilements as a result of the lack of proper urinal facilities. The height of the urinal needs careful study. When properly placed for the smaller boys, it is likely to be too low for older ones. A narrow bench may be used to advantage.

The other features of this toilet will be easily understood from the description which follows.

These cuts represent the self-cleaning, fly-proof, septic-tank privy which the State board of health, after three years' experimental work, recommends for country and town homes, hotels, railway stations, schools, and other places where no sewer connections are possible. The details have been worked out with extreme care, and the directions are followed to the letter the privy may be placed within 10 feet of the house, but never inside of it. Toilets and bathrooms from the house may empty into the tank, but kitchen sinks should never do so on account of the grease.

Pit and forms.—The size and depth of the excavation for the pit or tank are clearly shown in the cuts. The earth walls, if the digging is carefully done, will make the best outside forms for the concrete except where plank are needed above the surface of the ground as a form for the top of the tank walls. The inside forms can be made by any one of ordinary skill of any lumber which can be closely fitted so as to retain the moisture, and the lumber may be used over and over again for an entire community if care is taken in putting it together with light nails for easy removal.

Concrete.—The proportions for the mixture are: 1 part of good, fresh Portland cement, 2 parts of sand, and 4 parts of gravel or finely crushed rock, with enough water to bring it to the consistency of soft batter. For the tank of the size shown in the cut 15 bags of cement, 1 cubic yard of sand, and 3 cubic yards of crushed rock or gravel will be required. The floor of the tank should go in as soon as the digging is done. After this has set for 24 hours the forms should be tacked together and put in place care being taken to have no particles of trash or dust under them where the walls and floors are to join. The concrete should then be poured in, tamping constantly with thin-edge board next to the plank forms so as to give a smooth finish to the inside wall. After the walls have set for three days the forms should be removed and the surface of the inside walls and floor coated over well with a mixture of cement about the consistency of thick cream, put on with a whitewash brush. The seat should then be put in place and the tank covered with 1½-inch or 2-inch lumber so as to permit concrete to join concrete over the walls and entirely around the seat. The concrete to which is to be the floor of the privy, should be reinforced with one or two layers of galvanized iron fence wire, and finished to a smooth surface which may be easily kept clean.

Drains.—The drains of porous tile should extend in the aggregate about 100 feet depending upon the character of the soil, should be laid below the frost line and away from the well or spring, should have a sufficient fall, should discharge entirely underground, and the surface over them should be utilized for a flower bed or rose garden to be benefited by the constant irrigation and fertilization.

Filling and inoculating the tank.—Before the house is put in place and bolted down the tank should be filled with water and five or six shovelfulls of old, well-rotte

stable manure put in to inoculate the fluid with the liquefying germs upon which everything depends, a supply of toilet paper should be provided, and it is ready for use.

Aftermanagement.—A bucket of water should be poured through each hole in the seat and one through the urinal every day in order to break up the mass of fecal matter and toilet paper. The floors, and especially the urinals, should be well scrubbed daily, and care should be taken that the lids close down automatically after use.

If care is taken to make the tank water-tight, it will never need to be filled but once, and if no disinfectant of any kind is ever used except camphor balls in the urinals and the water is poured in daily as directed, and if the pipe from the urinal extends well into the water, there should be practically no odor, and in years there will be little accumulation of solid matter at the bottom of the first tank.

The accompanying cuts (figures 52, 53, and 54) of a septic-tank disposal plant designed for a washout inside toilet for a country residence or a small one-teacher country school, and its description, are reproduced through the courtesy of Prof. C. A. Haskins, engineer for the State Board of Health of Kansas:

The septic tank shown (figure 53) is constructed of concrete, but it may be built of brick or masonry just as well. If of concrete, the mixture should be 1:3:5, mixed not too wet, and well tamped into place. If the tank is built of brick, the brick should be laid in rich cement mortar, all joints well filled, and the cross wall bonded in with the side walls at every alternate course. In either case, after the mortar or concrete has had time to "set," the excess earth from the excavation should be well tamped around the sides, and the inside of the tank should be plastered with $\frac{1}{2}$ -inch coat of rich cement mortar. The inlet and outlet pipes and the siphon should be carefully set to the proper elevation shown on the drawing. It is important that the inlet and outlet pipes extend down below the water level to escape clogging by the scum which forms on top of the sewage. The top may be of concrete or wood, although wood is preferable on account of the fact that it may be so constructed that it may be all lifted off, affording ingress to the tank in case of stoppage. Ordinary 2 by 12 inch cypress lumber, with suitable 2 by 6 inch braces, are often used for roofs, with hinges on one side and a hasp on the other, for holding it closed. In case concrete is used for the roof, a manhole should be placed in both the tank proper and the dosing tank for ingress to the tank. In any event, the ventilating pipe should be in place as shown. The siphon is necessary to the proper working of the system, for if the sewage is allowed to trickle out into the drain tile as it comes into the tank from the house, most of it will leach out into the soil at the first few open joints, causing the ground there to become sour and foul smelling, and the full efficiency can not be obtained. With the siphon working properly, the effluent will be held in the dosing chamber until the proper elevation is reached, when it will all be rapidly discharged into the drain system.

In order that a more complete description of the method of operation of this form of siphon might be furnished than was given in the original published article (see Bulletin of the Kansas State Board of Health, No. II, November, 1913, pp. 215-219), a letter asking for such information was sent to Prof. Haskins. The following excerpt from his reply (December 17, 1913) will make its action clear:

The siphon operates in the following manner: First, the siphon is set in the dosing chamber of the tank exactly to its proper position. Then the trap is filled with water, the legs holding water level with the top of the small leg. The bell is then placed over the top of the long leg. As the water rises in the tank it reaches the bell, con-

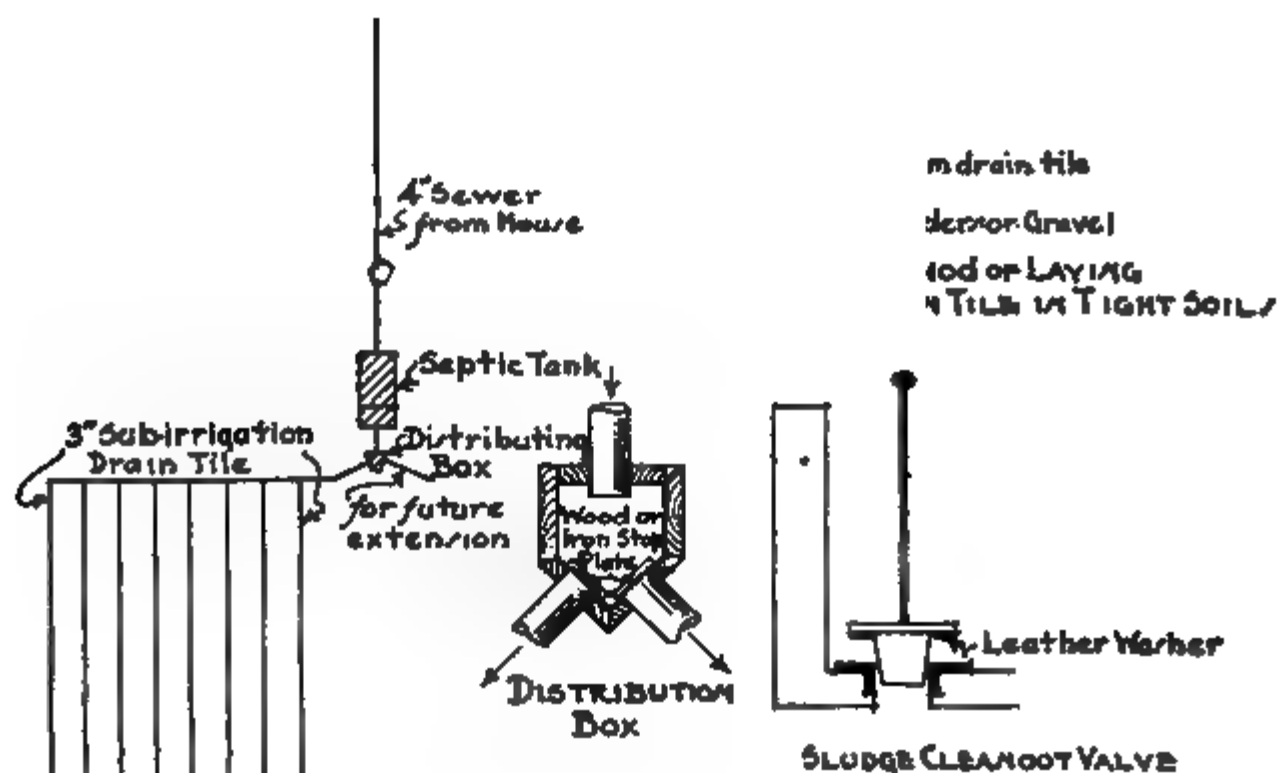


FIG. 52.

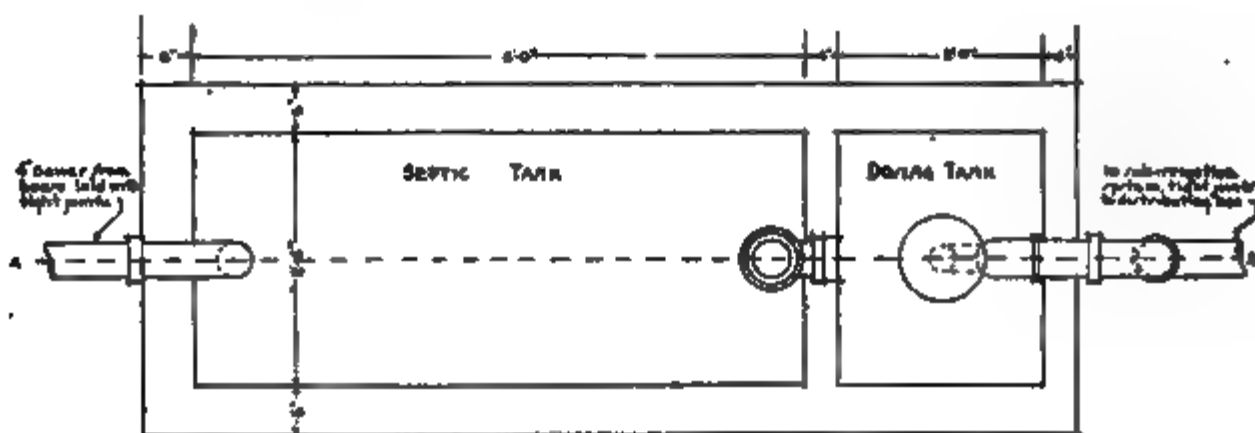


FIG. 53.

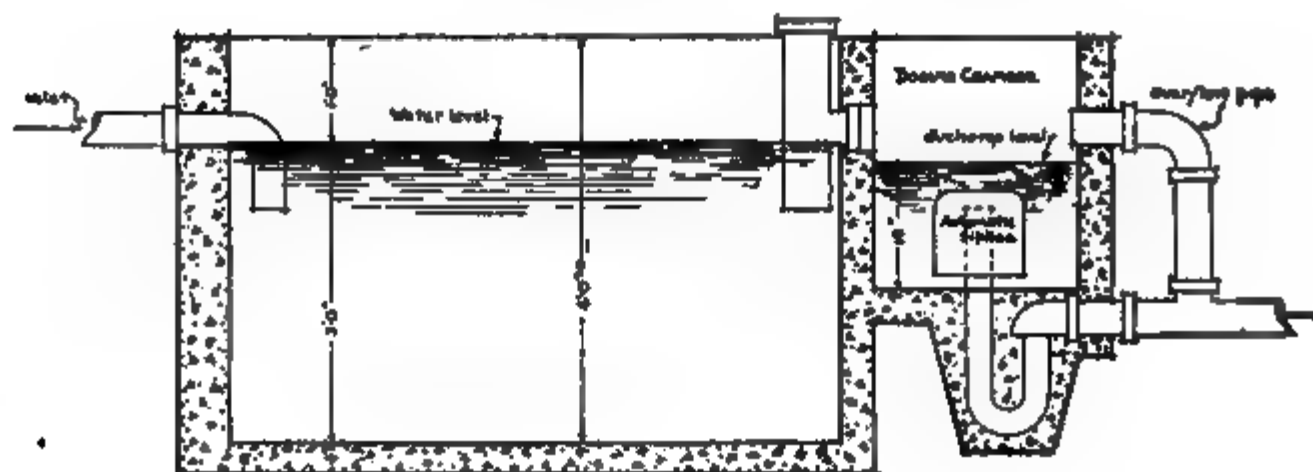


FIG. 54.

Septic tank. Sewage-disposal plant for single residences and country schools.

ing a certain volume of air in the bell and the long leg of the trap; and as the water continues to rise, the confined air starts to push downward the column of water in the long leg to the trap toward the bend at the bottom. During the period of filling the tank the column of water in the short leg is slowly spilled out by the pressure of the air and the column of water in the long leg, so that when the predetermined discharge level in the tank is reached we have the water line (the compressed-air column being behind it) just at the flattened bend at the bottom of the trap, the water line inside the bell being near the top of the long leg. Hence a balance of water columns exists, and no further water is admitted to the tank. This equilibrium is upset if a small amount of water is added to the tank, so that the air compressed in the trap by the water expands at the bend at the bottom and finds its way into the waste-outlet tile, while the original pressure exists in the tank. As soon as this air escapes, the water in the bell suddenly rises and the siphon is set into action, the water in the tank being drawn rapidly down and discharged. When the water reaches the bottom of the bell at the discharge, air is introduced, breaking the vacuum, and a complete circulation is established and the siphon is completely air-locked again, the trap is primed, and everything is ready for a second dose to be held back until the high-water line in the tank is again ready, and the discharge operation is repeated.

The connection from the house to the tank should be of 4-inch vitrified sewer pipe of the bell-and-spigot type. It should be laid to an even grade and alignment, and great care should be taken to see that all the joints are well filled with cement mortar, with a full bevel. This is especially important if the line passes through a grove of trees or through a swamp or low land—in the first case to prevent the entrance of fine roots, which will in time clog the pipes; and in the second case, to prevent the infiltration of ground water.

The pipes for the distribution system should be sound, hard-burned, 3-inch agricultural drain tiles, in 1-foot lengths. If necessary to reach a desirable location for the subirrigation system, the siphon may discharge into a 4-inch sewer, laid the same as the house connection, but on a grade of not less than 2 feet in 100 feet, to a diverting box or manhole, out of which the drain tile may lead in one or more lines. They should be laid at a depth of from 1 foot to 18 inches below the surface of the ground, and should be laid on a grade of 3 inches in 100 feet. This matter of grade, or "fall," should receive careful attention, since if the grade is too great the lower end of the pipe will receive more than its fair proportion of sewage, while if the grade is too small the upper end will receive too much.

The length of this 3-inch pipe should be proportioned according to the nature of the soil. If the soil is quite open and sandy, approximately 200 feet will be sufficient for the sewage from an ordinary residence, while if the soil is of a closer texture, 300 or 400 feet, or even more, will be necessary. The system is not well adapted to very tight and retentive clay soils, though it has been used successfully for a time in soils of this character. A desirable, though somewhat costly, modification that has been successfully used in tight soils consists in digging the trench about 4 feet deep, filling the lower 3 feet or so with cinders or gravel, and then laying the 3-inch distribution tiles at the surface of this porous filling material and covering them with about 6 inches of earth. The total length of distribution tiles deemed necessary for any particular installation may be laid in one or more single lines extending out from the septic chamber, or a single line may be divided into two or more branches, as indicated in the drawing. In case more than a single line is used, great care should be taken to see that each line receives its fair share of the septic-tank effluent. Where the natural slope of the ground is steeper than the grade required by the distribution system, these may be zigzagged down the hill.

It should be the expectation that once in one to four or five years the tank will require cleaning out, the frequency depending largely upon the character of the sewage.

The sludge taken from the tank at these cleaning periods will be found to be relatively small in amount, and may be best disposed of by running it into a trench or furrow and covering it over with soil. This cleaning out should be done in the fall of the year, if possible, as at this season the sludge in the tank possesses less odor and is less objectionable to handle than at other times. The sludge clean-out valve shown in the illustration may be built for this purpose, but it is not essential, as an ordinary "pitcher" pump may be used.

It should also be expected that every few years the distribution tiles will have to be taken up and relaid in a new trench a few feet away from their former position. This is simply because there is a gradual choking up of the open spaces in the soil with the result that the soil immediately adjacent to the pipes may become waterlogged and sour.

Particularly for those States where the rainfall is such that the water of the sewage as well as its fertilizing constituents, has an appreciable value, the disposal scheme outlined above may have a considerable economic as well as important sanitary value. It is quite possible by this method to maintain in the driest region a large, well-fertilized and well-watered lawn. The process should be carried on entirely without odor, though, of course, the septic tank should be located at some little distance from the house—say 100 feet or more—if possible. Especially, the disposal plant should not be near any open well which is used as a source of water supply.

This plant is automatic in operation, but, nevertheless, will require some care. It should be carefully inspected occasionally to see that the pipes are not stopped up, that the tank itself is not completely sludged up, and that the siphon is working properly. However, if the plant is carefully built, according to the drawing and the directions included herein, it should give good general satisfaction.

Recently a chemical toilet has been developed which is designed for indoor use where flushing toilets can not be introduced on account of the lack of water supply or of sewage disposal. The closet is constructed, as will be seen by the illustrations (Pls. 41 A-B) of a steel cabinet finished to resemble wood. This incloses a galvanized container with a lid and the necessary handles for removing it and carrying it away. The toilet is prepared for use by introducing into it a chemical which is claimed to be "a powerful germicide, deodorant and disinfectant." A circulation of air and an exhaust are provided, so that no odors escape. Such a toilet as this, if really practicable, may be introduced into a special room in a country schoolhouse and the excreta may be carried away and deposited where there is no danger of odors or infection is possible. This device has perhaps not yet been tested for a sufficient length of time to warrant a statement that it will satisfy all sanitary conditions, but it is worth careful consideration.

APPENDIX.

A HEALTH PROGRAM FOR COUNTRY CHILDREN.

In their efforts to improve hygienic conditions in the schools and in the community, teachers frequently find some assistance in a simply worded health program or creed for the individual child to apply to his own experience. The following is not intended as a final or exhaustive statement of such a program, but it is believed that by means of it the rural teacher may be able to drive home certain fundamentals in hygiene and sanitation that will ultimately mean much for good health in home, school, and community and make a direct contribution to the movement for better schoolhouses in the country. It is assumed that the teacher will select such of these items as seem most useful for her purpose and supplement them with illustrative examples from real life.

LEST I FORGET.

I believe that good health and a strong body are essential, and that the only real wealth is good health. In order that I may be strong and well, therefore, I will endeavor to observe the following rules of health:

1. I will keep my teeth clean by using my toothbrush every day.
2. I will drink no coffee or tea before I am 20 years of age, and no sort of alcoholic stimulants at any time in my life, unless ordered to do so by a physician.
3. I will chew my food thoroughly.
4. I will sleep at least nine hours each night in well-ventilated rooms winter and summer, or in an open-air sleeping porch.
5. I will bathe my whole body at least once a week and keep my face, hands, and nails clean.
6. I will strive daily to acquire a habit of self-control, habits of anger being not only wrong but unhealthful.
7. I will strive to help make my home as clean and sanitary as possible, especially to prevent contamination of the milk and drinking water.
8. I will do all I can to prevent the development of flies about the house in which I live, since they carry the germs of typhoid fever and other diseases.
9. I will do all in my power to prevent mosquitoes from breeding in or about the house I live in. I will bury or destroy all old tin cans, barrels, or other vessels which catch and hold rainwater and offer a place for mosquitoes to breed. I will help to drain all stagnant pools near my home or put kerosene oil on them once every 10 days during summer.
10. I will try hard to kill all rats and mice about my home, since they are both troublesome and dangerous, carrying, among other things, the bubonic plague, one of the most deadly of all diseases.
11. I will do all in my power to help secure sanitary toilets throughout the whole neighborhood.

12. I will strive to keep the backyard of my house as clean and tidy as a front yard should be kept.

13. I will take no patent medicine, and will do all I can to teach people that most of it is both useless and harmful.

14. I will keep my personal life clean and pure, for it is a duty I owe to myself and to all who live now and may live in the future.

15. I will take good care of my eyes, taking special pains not to strain them by reading at night or in bad light.

16. I will be careful about spitting, since disease is often spread in that way.

17. I will do all I can to help make our schoolhouse more attractive and to keep it clean and neat at all times.

18. I believe the best investment I can make for myself and my family is to invest in good health, a good education, and a clean moral life.

19. I will strive with all my power to make country life more healthful, more enjoyable, and more beautiful. I believe life in the country is finer and better than life in any city.

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BUREAU OF EDUCATION

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B. DOMESTIC SCIENCE, RURAL SCHOOL IN LOUISIANA.

A. NEGRO SCHOOL. CAROLINE COUNTY, VA. A PRIZE GARDEN.

B. SEWING. INDUSTRIAL WORK IN VIRGINIA COLORED SCHOOLS.

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B. REAR VIEW, MODEL 1.

C. FRONT AND SIDE VIEW, MODEL 5.

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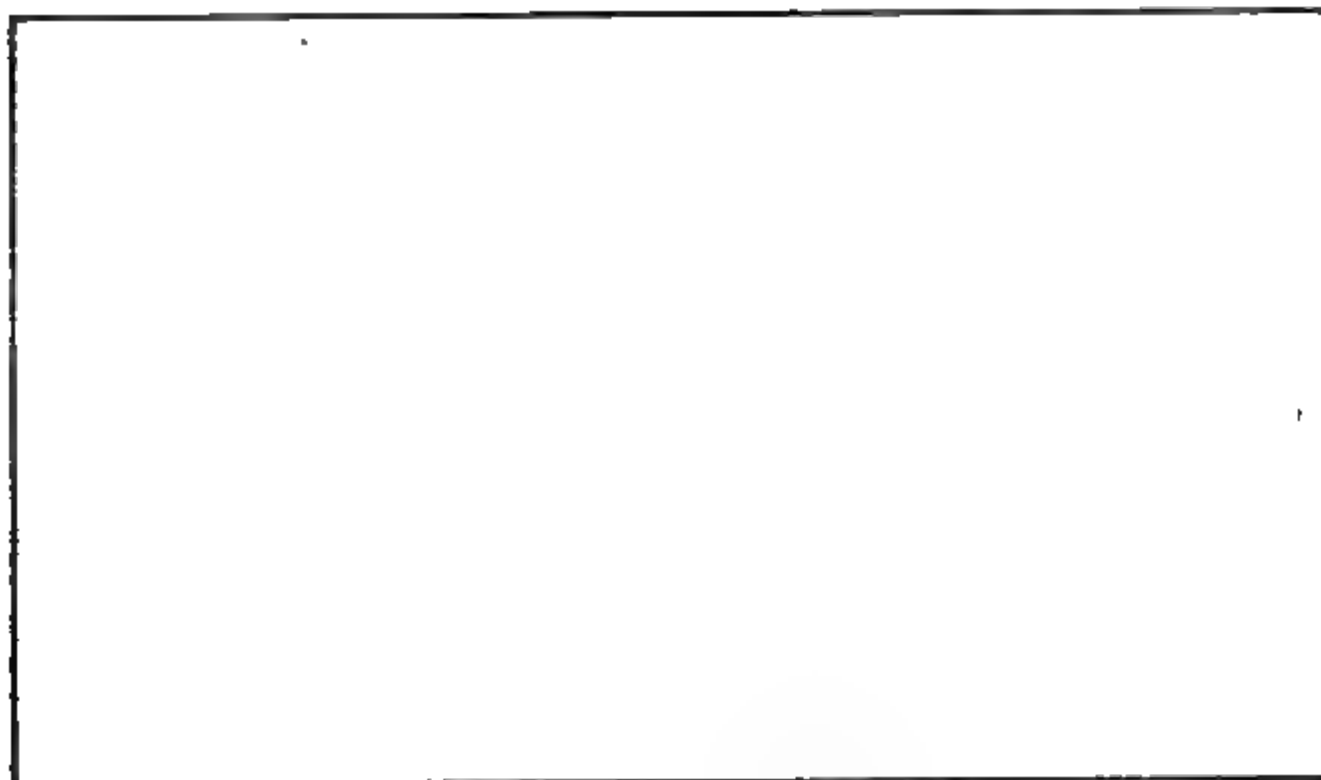
B. INTERIOR VIEW, MODEL 2.

A. SIDE VIEW OF MODEL 3.

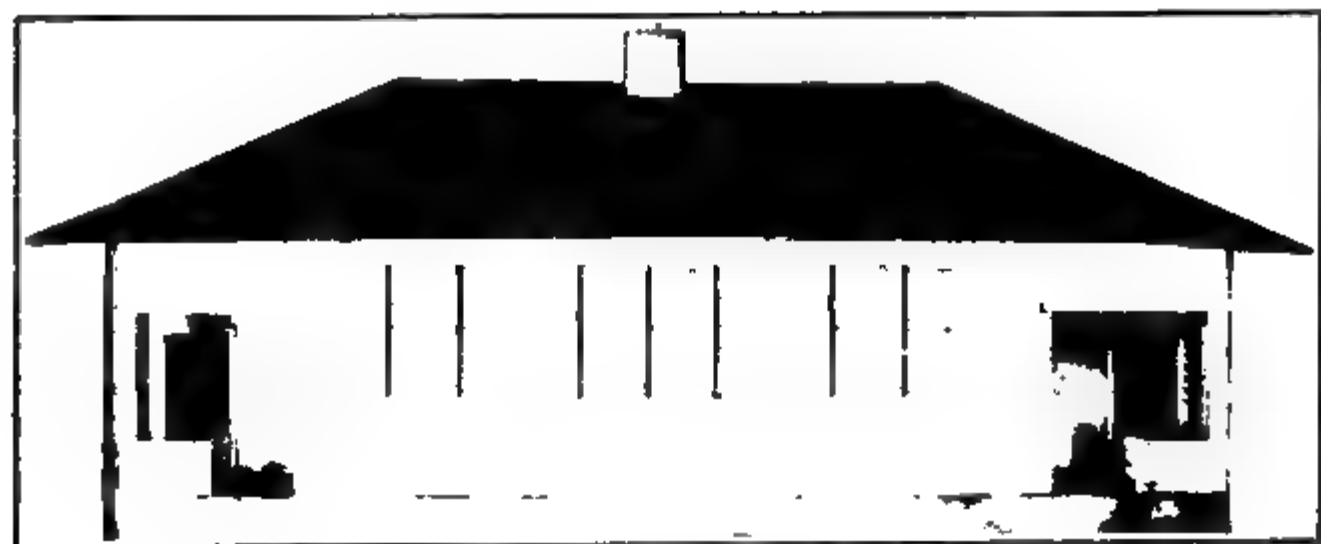
B INTERIOR VIEW OF MODEL 3

A. INTERIOR VIEW, MODEL 5.

B. BASEMENT PLAN, MODEL 5.



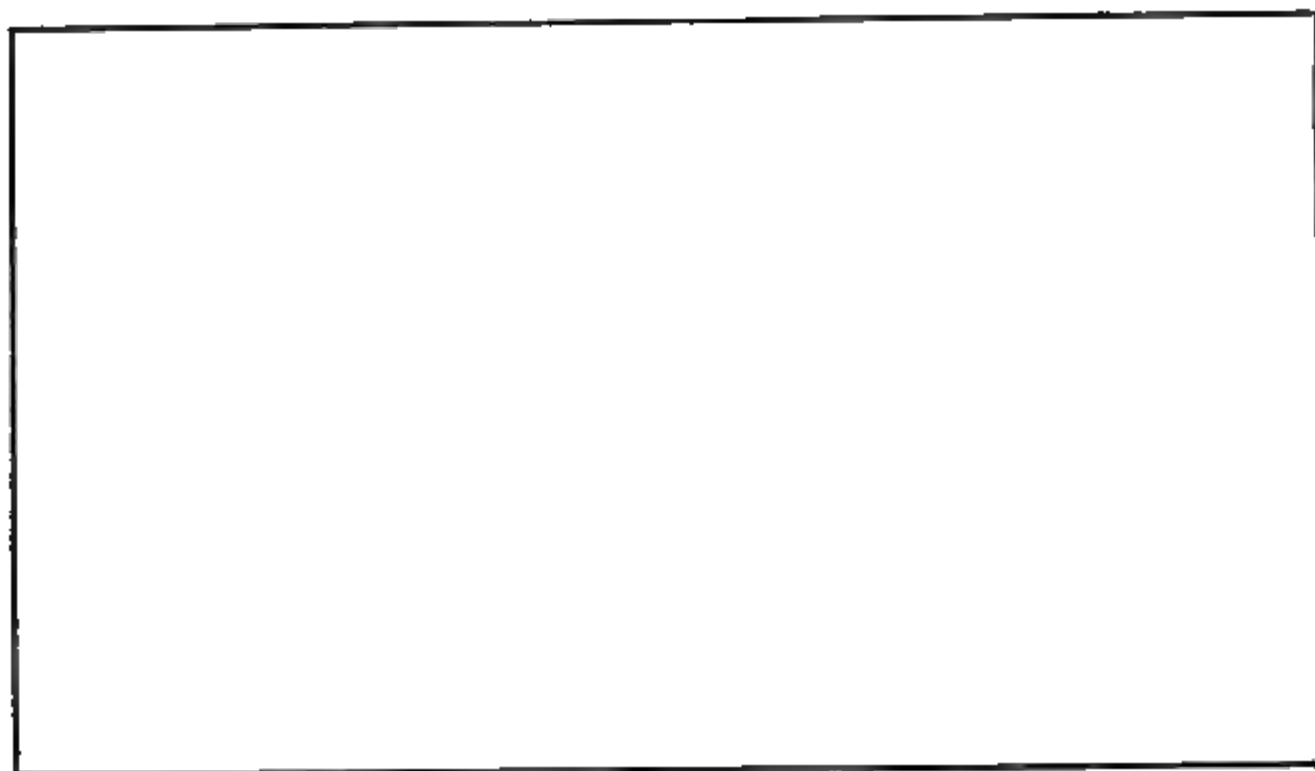
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B. FRONT VIEW, MODEL 4.



C. GROUPING OF WINDOWS, MODEL 4.



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B. BLACKBERRY-HOLMBERG SCHOOL, DISTRICT NO. 1, ITASCA COUNTY, MINN.

A.

B.

C.

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A. MASONVILLE DISTRICT NO 13, YAMHILL COUNTY, OREG.

B. HIGH HILL SCHOOL, DARLINGTON COUNTY, S. C.

A. RURAL SCHOOL AT MARBURY, ALA.

B. COMET SCHOOL, ISLE OF WIGHT COUNTY, VA.

A. DISTRICT NO. 10 BOULDER COUNTY, COLO.

B. LOGANSPORT, W. VA.



A. DISTRICT NO. 28, MOWER COUNTY, MINN.

B LOS PADILLAS, BERNALILLO COUNTY, N MEX.

A DISTRICT NO. 31, BOULDER COUNTY, COLO.

B. POTTER COUNTY, PA

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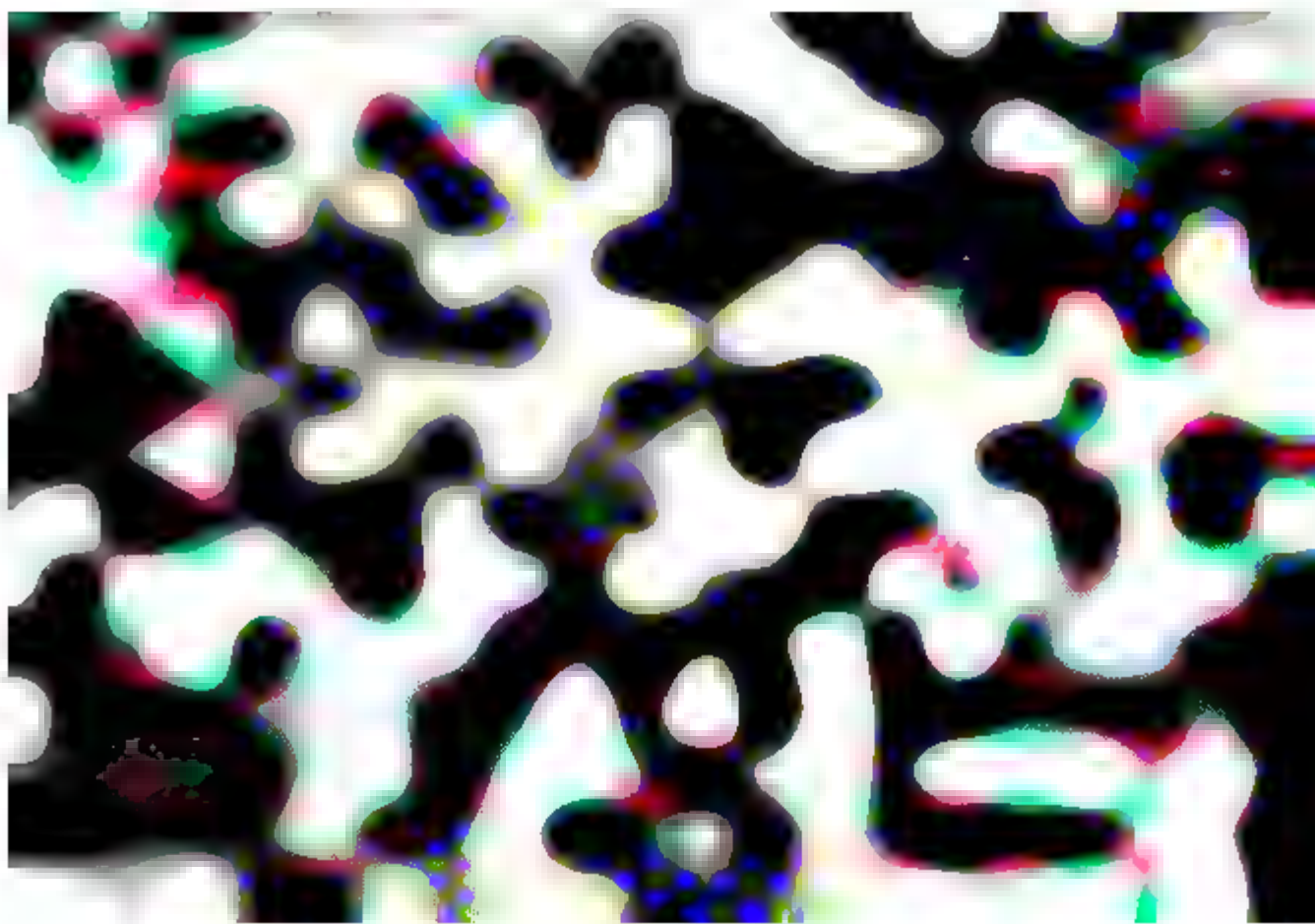
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B. THE MODERNIZED BASEMENT OF PORTER SCHOOL.

BUREAU OF EDUCATION

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A. CLASSROOM, SILAS WILLARD SCHOOL, GALESBURG, ILL.

B. CLASSROOM, SILAS WILLARD SCHOOL, GALESBURG, ILL.

A. CORRIDOR, SILAS WILLARD SCHOOL, GALESBURG, ILL.

B. AUDITORIUM AND GYMNASIUM (IN BASEMENT), SILAS WILLARD SCHOOL,
GALESBURG, ILL.

A. CACHE LA POUDRE CONSOLIDATED SCHOOL, COLORADO.

B. WASHOE COMMUNITY SCHOOL, PAYETTE, IDAHO.

TEACHER'S COTTAGE, RICHLAND COUNTY, S. C.

SCHOOLBOYS IN WASHINGTON STATE TRANSFORMING AN OLD SCHOOLHOUSE
INTO A MODERN COTTAGE FOR THE TEACHER.

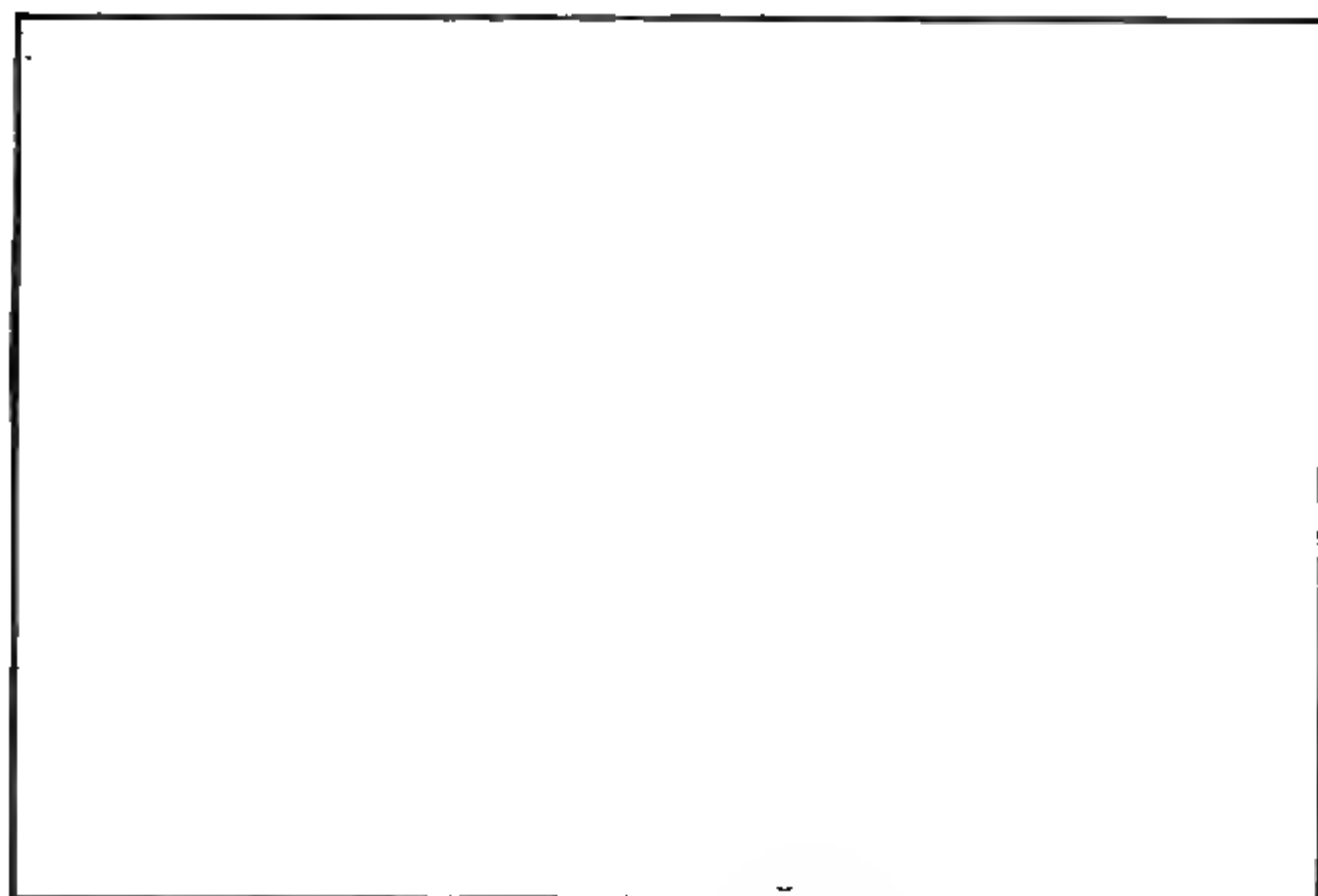
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A. WASHINGTON RURAL SCHOOL; TEACHER'S COTTAGE IN CENTER.

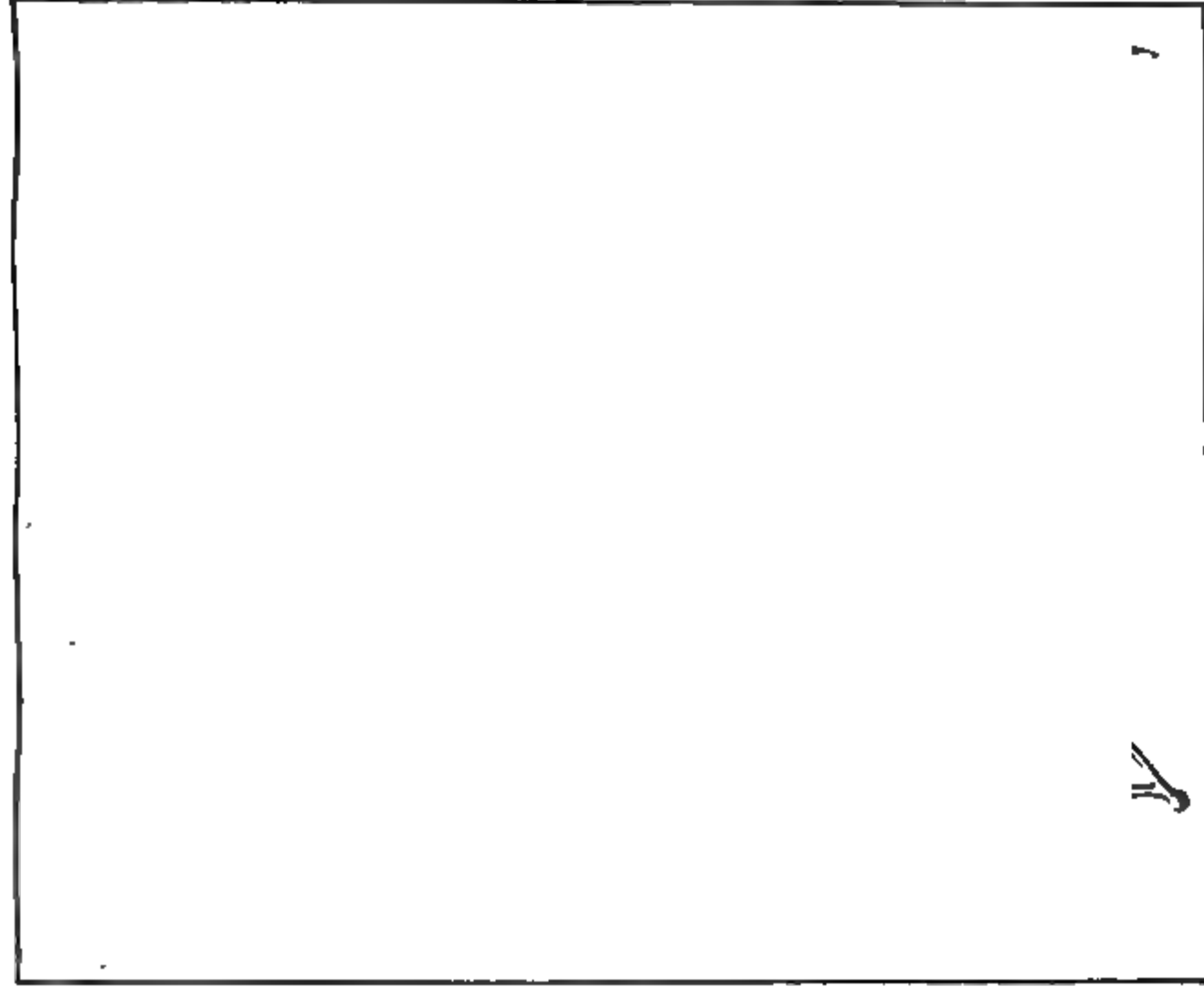
B. COTTAGE FOR TEACHER; RURAL SCHOOL IN WASHINGTON STATE.

Courtesy of Mrs. Josephine Preston, State Superintendent.



A. MODEL RURAL SCHOOL. J. H. FELT & CO., ARCHITECTS, KANSAS CITY, MO.

B. CLIMAX HIGH SCHOOL, PITTSYLVANIA COUNTY, VA.



A RECENTLY PATENTED DEVICE FOR INDOOR TOILETS IN RURAL SCHOOLS OR RESIDENCES.

BUREAU OF EDUCATION

BULLETIN, 1914, NO. 12 PLATE 42

A SCHOOL PRIVY IN A WESTERN STATE.

The only provision for the young woman teacher and pupils of both sexes

BUREAU OF EDUCATION

BULLETIN, 1914, NO. 12 PLATE 43

DRINKING FOUNTAIN ATTACHED TO PUMP.

BUREAU OF EDUCATION

BULLETIN, 1914, NO. 12 PLATE 44

HOW WELL WATER MAY BE CONTAMINATED.

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LETTER OF TRANSMITTAL. .

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., October 11, 1913.

SIR: There is a general demand for information in regard to the condition of drawing and art in the elementary and secondary schools of this and other countries. In partial response to this demand Mr. Royal Bailey Farnum, specialist in drawing and handwork in the New York State Education Department, has, at my request, prepared the manuscript transmitted herewith, showing the status of drawing and art in the schools of the United States. I recommend that the manuscript be published as a bulletin of the Bureau of Education. I hope to be able to submit later a manuscript embodying the results of a thorough investigation of this subject in other countries.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

PREFATORY NOTE.

In preparing this monograph the author has tried to present material which will not only be available for future reference, but also for immediate and practical use. A number of representative outlines have therefore been reprinted.

In gathering the subject matter which has been included, the author wishes to express his grateful appreciation for the prompt and generous response from every person appealed to, without exception. Though some material was not available, and a number found it impossible to materially assist in the work, yet all offered cordial assistance and were kind enough to make some response. Such is the spirit of the drawing teacher and supervisor.

For data used in writing the *Historical Development of Drawing*, the volumes on "Art and Industry," edited by Isaac Edwards Clarke and published by the United States Bureau of Education, and "Art Education in the Public Schools of the United States," edited by James Parton Haney, were consulted.

Special acknowledgment is due those supervisors and teachers who freely offered the use of their writings, outlines, and photographs which make this publication one of national significance, for it represents the thought of the leaders in art education of this country. Further acknowledgments are recorded in footnotes throughout the bulletin.

ROYAL B. FARNUM,

State Specialist in Drawing and Handwork, Albany, N. Y.; Chairman American Committee for Fifth International Congress, for Art Education, Drawing and Art Applied to Industries.

PRESENT STATUS OF DRAWING AND ART IN THE ELEMENTARY AND SECONDARY SCHOOLS OF THE UNITED STATES.

A. HISTORICAL DEVELOPMENT.

When, in the light of the present day and our modern educational views, one stops to contemplate the early struggle which accompanied the entrance of drawing as a regular subject in the school curriculum, it seems incredible to think that any conflict should ever have existed. What is now considered so essential for the training and development of every child was, somewhat less than two centuries ago, practically unheard of. It is interesting to note that there was at an early date a growing conviction that drawing should become a part of elementary studies and should be introduced upon a practical basis. No less an authority than Benjamin Franklin advocated the subject as early as 1749, when in his "Proposed hints for an Academy" he says:

As to their studies, it would be well if they could be taught *everything* that is useful and *everything* that is ornamental. But art is long and their time is short. It is therefore proposed that they learn those things that are likely to be *most useful* and *most ornamental*, regard being had to the several professions for which they are intended. All should be taught a fair hand, and swift, as that is useful to all. And with it may be learned something of drawing by imitation of prints and some of the first principles of perspective, arithmetic, accounts, and some of the first principles of geometry and astronomy.¹

In these mere "hints," which presaged the adoption of what was eventually to become a common-school subject in Boston and throughout the whole country, a Boston boy was outlining courses in drawing from the practical and utilitarian standpoint, "regard being had to the several professions for which they are intended," and was seeking their adoption by his fellow citizens in the public schools of Philadelphia.

Early data relative to drawing as a particular and special phase of education are necessarily brief and incomplete, but in connection with an interesting biographical sketch of a member of one of the earlier school committees of Boston, published in Barnard's American Journal of Education in 1861,² this subject receives some attention. It appears that William Bentley Fowle was so profoundly interested in education that he volunteered to assume temporary charge of a large boys' school in Boston upon the sudden illness of

¹ Barnard's Jour. of Ed., vol. 27, 1877.

² The Amer. Jour. of Ed., edited by Henry Barnard, LL. D., Hartford, Conn.

Miss Peabody urged its use in schools on utilitarian grounds as well as pedagogical. She, with her sister, who later married Horace Mann, was at this time giving gratuitous instruction in one of the schools of Boston and at the same time actually working out her ideas as developed in the book. A class was also organized among primary teachers, and included nearly 100. A "Primer of Reading and Drawing," by Mary T. Peabody, was the basis of instruction.

Reference was made in the same journal to a manual on the use of blackboards, published about this time by William A. Alcott. Mr. Barnard seems to think the work so valuable at a time when such boards had been "but barely introduced" that he caused it to be republished in full. One of the 19 chapters was devoted to its use in teaching drawing. In it Mr. Josiah Holbrook is cited as one who had done much in advancing the cause of drawing by publishing some three years previous a series of drawing cards, 36 in number, which were to be used as aids in the subject. The course covered lines, geometrical figures, and outlines of familiar objects.

Here, again, the industrial aspect of the work, later to be so strongly and continually emphasized, failed to be considered. However, the artistic side was by no means being neglected.

For many years Rembrandt Peale had two ideals ever before him:

"One was to paint a Washington which would be worthy of the subject and which should command the confidence of his countrymen; the other was to inaugurate a system of teaching drawing which should make it as cheap, as elementary, and as common as reading and writing.¹

With him rests the honor of having painted the last portrait, from life, of Washington, although far inferior to his ideals, and, in accordance with his second ambition, he left in Philadelphia the foundation for successful drawing instruction.

It was in 1840 that Peale first made the effort to try out his ideas in the public high school at an insignificant salary, for money-making was not his object. Success greeted him from the start, and "the proficiency of the students of the high school in this branch was the common remark of all intelligent educators who visited the institution." At the end of two years he became so enthused with his ideas that he offered to supervise the work in the elementary grades without charge, provided he were given the proper authorization. This generous and well-meaning offer met unexpectedly with a violent check. Some of the school board through ignorance or political reasons opposed such a scheme. Their idea that drawing stood for painting and was an accomplishment to be studied at the close of school life rather than at the beginning, found no accord with the

¹ Extract from letter of John S. Hart, of Philadelphia, written to Gen. John Eaton, U. S. Commissioner of Education, 1875.

proposed scheme. Peale's whole proposition was severely criticized and he himself denounced as a "charlatan." It was at his request then that a committee of investigation was appointed which not only examined his records at the high school, but consulted with educators and men of artistic and engineering professions. The opinions of these men, later printed in full, form a most interesting series of documents. It appears that a set of some 40 questions was presented to each man consulted and were in many instances quite fully answered. The questions were calculated to develop the problem of the possibility of teaching drawing and led from general to definite queries relating to the methods pursued and advantages to be gained from such a subject.

The following are interesting examples answered by the well-known artist, Mr. Thomas Sully:

(1) Should instruction in drawing commence with drawing by the eye or with instruments?—It should by all means commence with drawing by the eye.

(2) Should instruction in drawing commence with perspective and drawing from models or with drawing from patterns?—The pupils should copy patterns first, and models afterwards.

(4) What are the things chiefly aimed at in learning to draw?—Accurate perceptions of the true forms of objects and skill of hand in imitating what is seen.

(9) Can this training of the eye and hand be gained with as much ease and certainty by beginning to draw from models before copying patterns?—It can not.

(15) Is the time given in the high school to this department (less than two hours a week) sufficient to extend the course of instruction advantageously to any other branches of drawing than pencil drawing from patterns and models?—I should think not.

The report of the committee was unanimously in favor of Peale and his drawing course, and shortly after the course was adopted in the grade schools. But the board was not unanimous and Peale was so hindered and seriously hampered in his courageous attempts that he was compelled to resign in 1844, much to his own sorrow and the regret of his many friends. The course, published in book form in 1845, and called "Graphics, the art of accurate delineation, a system of school exercises for the education of the eye and the training of the hand, an auxiliary to writing, geography, and drawing," was, notwithstanding his resignation, continued in use for many years.

Two of the main elements of Peale's system as explained by himself were as follows:

(1) The eye should be trained from early childhood to recognize the elements of form, and the earlier this training of the eye begins, the better for the education of all the perceptive faculties. The training of the eye to see form, and of the hand to imitate it, should go hand in hand, the training of the eye, however slightly preceding that of the hand.

(2) The scholar should first copy patterns and afterwards copy from nature. He should first learn free, offhand drawing, afterwards mechanical drawing.

A skeptical school board and indifferent public did not exist alone in Philadelphia. In 1848 Mr. William Minifie, in contrast to the general idea of drawing as a subject for picture painting, was teaching it as a science and making exceptional progress with his pupils in the boys' high school of Baltimore. But such efforts were not to continue longer than two years. An ignorant member of the school committee must needs install an equally ignorant favorite on the subject of industrial drawing, and for 20 years little work of practical value was accomplished.

It is interesting to note that Minifie continued to lecture on the subject and published "A Textbook of Mechanical Drawing and an Essay on the Theory of Color," and a number of addresses. In his preface he seeks to call to the attention of the public the necessity of giving opportunity for instruction in drawing as a common-school subject, and also says:

To get good designers we must take the proper means for educating, and if we should make drawing a branch of common-school education, we should have an opportunity of selecting those who evidenced superior talent for the art and at the same time, by improving the taste of all, we should create in many an appreciation of the beautiful, and consequently very much extend the consumption of art productions.

Such was the widespread influence of Minifie's works that in 1852 his textbook was introduced into "the department of art of the Government School of Design of Great Britain and is still in use in 1870."

Says Clarke:

It was no unreasonable supposition that Walter Smith, in using this textbook, had himself been trained, while attending the Government Art School of Marlborough House and South Kensington, in the very system taught by the Baltimore teacher with such success.

At about this time (1849) drawing was being introduced into the schools of Cleveland, Ohio. An early history of the public schools by the able superintendent, Andrew Freese, states that a Miss Crosby had for a few months given instruction in the "higher schools," supervising at the same time in the lower grades, but the board felt that these few months were sufficient to start the regular teachers in the work and Miss Crosby's services were no longer needed.

Contrary to the board's expectations, however, the teachers, realizing their incompetency, were compelled to take private instruction. A Mr. Shattuck was first employed, a man who had already published an excellent book on the subject. Later they sought assistance from Prof. John Brainerd, also an author of a "Course of Drawing Lessons." Prof. Brainerd showed much sympathy for the teachers and took such an interest in the work that he continued for some time to visit the classrooms and give class lessons. This was done with no thought of compensation, yet the board found such creditable work resulting in

all departments that permanent arrangements were made for retaining the services of such an able instructor, and Prof. Brainerd remained some seven or eight years.

Thus the subject of drawing was being agitated in all parts of the eastern section of the country, and many excellent projects were being attempted. As in any great movement many failures must endure before the cause is won, so drawing was constantly attacked and even repudiated for many years before it won its final and initial step in the widespread movement which was soon to sweep the whole country.

As has been shown, a number of cities had started the subject as a common study for the public schools, but it remained for Massachusetts as a State to take the first step. In the thirty-eighth chapter of the Massachusetts General Statutes, published in 1860, the following is found:

Algebra, vocal music, drawing, physiology, and hygiene shall be taught, by lecture or otherwise, in all public schools in which the school committee deem it expedient.

This is the early beginning of State action and was followed in the annual volume of laws for 1869, chapter 80, by directions sent the board of education—

to prepare a plan for free instruction, to men, women, and children in mechanical drawing, either in existing schools or in those to be established for that purpose, in all towns and cities in the Commonwealth having more than 5,000 inhabitants, and to report a definite plan therefor to the next general court.

During this same year the city of Syracuse in New York State formed an art department in the high school. Here all pupils, and others, with permission from the superintendent, received instruction in drawing, and, furthermore, classes for the city teachers were formed. The course prescribed for four years was as follows: First year—geometrical drawing; second year—perspective; third year—model and object in outline; fourth year—model and object in light and shade.

Undoubtedly the subject was attracting public interest, and the very next year (1870) we read in chapter 248 of the annual volume of Massachusetts Laws, of "An act relating to free instruction in drawing." The act is in three sections and briefly states that "industrial or mechanical" drawing may be freely taught in any city and town, and free instruction must be given in cities and towns of over 10,000 inhabitants.

This final State action was the natural climax to a long series of discussions and arguments among educational and industrial men, but the immediate steps resulted from a petition presented to the legislature in June, 1869, by a committee of prominent citizens who were not only vitally concerned in the industries of the State, but who were interested in the educational welfare of the people.

This memorable petition, indicative of the feeling of the time, is given below:

(CHAP. 80.)

RESOLVE Relating to provision for free instruction in mechanical drawing in the cities and large towns of the Commonwealth.

Resolved, That the board of education be directed to consider the expediency of making provision by law for giving free instruction to men, women, and children in mechanical drawing, either in existing schools or in those to be established for that purpose, in all towns of the Commonwealth having more than 5,000 inhabitants, and report a definite plan therefor to the next general court.

Approved, June 12, 1869.

Said resolve was passed in response to a petition signed by several well-known and highly respected citizens, distinguished for their interest in popular education, and for their connection with those great branches of mechanical and manufacturing industry which absorb large amounts of the capital and give employment to great numbers of the residents of the Commonwealth. The petition is as follows:

To the honorable General Court of the State of Massachusetts:

Your petitioners respectfully represent that every branch of manufactures in which the citizens of Massachusetts are engaged requires, in the details of the processes connected with it, some knowledge of drawing and other arts of design on the part of the skilled workmen engaged.

At the present time no wide provision is made for instruction in drawing in the public schools.

Our manufacturers therefore compete under disadvantage with the manufacturers of Europe, for in all the manufacturing countries of Europe free provision is made for instructing workmen of all classes in drawing. At this time almost all the best draftsmen in our shops are men thus trained abroad.

In England, within the last 10 years, very large additions have been made to the provisions, which were before very generous, for free public instruction of workmen in drawing. Your petitioners are assured that boys and girls by the time they are 16 years of age acquire great proficiency in mechanical drawing and in other arts of design.

We are also assured that men and women who have been long engaged in the processes of manufacture learn readily and with pleasure enough of the arts of design to assist them materially in their work.

For such reasons we ask that the board of education may be directed to report in detail to the next general court some definite plan for introducing schools for drawing or instruction in drawing free to all men, women, and children in all towns of the Commonwealth of more than 5,000 inhabitants.

And your petitioners will ever pray.

JACOB BIGELOW.

J. THOS. STEVENSON.

WILLIAM A. BURKE.

JAMES LAWRENCE.

EDW. E. HALE.

THEODORE LYMAN.

JORDAN, MARSH & Co.

JOHN AMORY LOWELL.

E. B. BIGELOW.

FRANCIS C. LOWELL.

JOHN H. CLIFFORD.

WM. GRAY.

F. H. PEABODY.

A. A. LAWRENCE & Co.

Boston, June, 1869.

Various reports of school committees throughout the State discuss at length the act of 1870, and the subject of drawing in particular,

and a marked increase of interest is evinced by these discussions. From year to year, more and more local reports take up the question and remark upon its highly successful outcome.

Other States, too, followed this movement of Massachusetts. Following an interesting annual report of Warren Johnson, State superintendent of common schools, the State of Maine took action in the year 1871 permitting free instruction to persons over 15 years of age in either day or night schools.

Largely due to the influence of the work of the art department of Syracuse, New York State enacted in 1875 a law compelling instruction in industrial or free-hand drawing in each of the State normal schools, in at least one department of a city system, and in each "union-school free district," unless excused by the State superintendent of public instruction. It is interesting to note that, whereas in Massachusetts in 1870 the term "industrial or mechanical drawing" was used, five years later in New York it was changed to "industrial or free-hand drawing."

In Ohio the State superintendent advocated at length the introduction of drawing as a required study, but though the larger cities, Cleveland, Cincinnati, Columbus, etc., were already experimenting, no definite State action was secured.

In Connecticut, Iowa, and Wisconsin similar inaction prevailed, though here also much public interest was aroused and the cities acted individually.

Meantime, in Massachusetts the State scheme was being carefully and systematically worked out. Following the act making drawing compulsory, the State board of education applied to the legislature for an increased appropriation for the following purposes: First, to secure the services of an agent competent to direct the work in normal schools and visit and confer with city school boards; second, to provide some means for training special drawing teachers. Early in the year the school committee of Boston had corresponded through the State board subcommittee with the head master of the School of Art, in Leeds, England, with a view to procuring his services as a director of drawing for that city. During the visit of Walter Smith to look over the ground and determine for himself the character of his work, should he accept, he met with a committee of the State board and they determined to secure his services for the State work. Finally, both positions were offered, with the provision that part time be given to both and the State pay two-thirds of his salary and his traveling expenses. Prof. Smith accepted the joint service and commenced his work early in the following autumn. So the work was finally begun on a systematic basis. Mr. Smith immediately began visiting towns and cities and addressing large bodies of teachers.

He continually preached that teachers must be trained, and with that aim in view he set himself to the task of bringing about the establishment of a normal art school, for, he said:

I have recommended that, to introduce drawing into the common schools, the regular teachers should be instructed by a special teacher of drawing; that then they be required to instruct their scholars.

The incredible results of his first year's work are ably set forth in his first annual report to the State board of education in 1872. Various paragraphs under the following heads show the extent of his first year's duties: The traveling museum; Personal visits to cities; Conferences with school committees and teachers; Addresses to teachers; Normal schools; Public meetings; Examination of night classes; Exhibition of drawings in Boston; Proposed State normal art school; Purchase of casts, etc., by different cities; the South Boston School of Art; Occasional duties. Under the last head he makes reference to numerous courses of study which he made out, guides to black-board drawing, and a published work on "Art Education, Scholastic and Industrial." The praise of Col. Isaac Clarke is none too great for a man of such colossal power as Walter Smith. The mere enumeration of his first year's work, a stranger in this country, is overwhelming. Under such a leadership it is little wonder that from Massachusetts sprang the lasting fruits of art education.

During the second year of his work, in 1873, the Massachusetts Normal Art School was founded, with an appropriation of \$7,500 for its maintenance. Walter Smith was at once made director, and in turn he appointed a competent force of instructors. The school was a success from the start, and its history records the development of art education from its foundation to present times, for its graduates not only became the promoters of this work in Massachusetts, but throughout the country as well. As directors of the foremost art schools, State supervisors, city directors, editors and writers, craftsmen, painters, sculptors, and architects, the alumni of this parent school and their children of one and two generations lead in the art world of these United States to-day.

Following the advent of a school for the training of drawing teachers, the subject increased in importance and value throughout the Commonwealth. Cities began to employ specialists with most creditable results. For three years the school had an opportunity of strengthening the work so well started by the State director, when the State was called upon to exhibit her results at the Philadelphia Centennial Exposition, in 1876. When the exhibition opened—

It was found that the subject of industrial art drawing was carefully and fully illustrated by the exhibition in the gallery appropriated to them in the main building, of examples of the work done in the Normal Art School and the public schools of the State, as shown by the Massachusetts school authorities. Besides this comprehensive

showing of the working of a complete State system, there were many other similar collections of drawings by school children shown by the school authorities of towns and cities of other States, but these last were necessarily scattered in different places with the several educational exhibits, as has been stated, so that it was only possible to see them singly.¹

The following report of the United States Centennial Commission, edited by Francis A. Walker and taken from Volume VIII of the Reports and Awards, group 28, best describes the art work exhibited, and shows not only the character of work throughout the country, but expresses the aims and ideals held paramount by the leaders of that time:

At the Centennial Exhibition, Massachusetts undoubtedly held first place. This is shown by the report of the judges for the educational exhibits. "On every hand and in many forms, are presented the fruits of her genius to the gaze of the enchanted visitor. In the faces of many there was a manifest bewilderment. Was this imported work selected from the famous art schools of Europe—the École des Beaux Arts, the great school of Kensington, or the noted schools of Germany and Italy? Or was it possibly done by American artists trained in those great nurseries of art? It certainly was not the work of Yankee school boys and girls with only such training as it is said they are getting in these latter days in the common schools!"

There seemed to be, however, some question as to whether the methods of teaching in Massachusetts conformed altogether to the opinions of the higher authorities. The report speaks of this as follows: "Touching the question whether the methods of art instruction employed in the Massachusetts schools are those best calculated to accomplish the object, it is proper to say that the judges were not unanimous, some being of the opinion that more time is spent in geometric drawing than is generally profitable and that much of the effort devoted to drawing from flat copy could be very advantageously applied to drawing from the round and from natural objects."

The work as covered at that time is outlined in the report as follows: "In the primary schools the pupils are trained in geometrical definitions and in the simplest principles in decorative design; in drawing with the freehand from printed copies, from memory, from dictation, and from blackboard copies, and in original composition. There is practice in proportional enlargement and reduction. Only two dimensions are represented and there is no imitative drawing of natural objects. Conventional leaves and flowers are used in some of the decorative designs.

"In the grammar schools, the work of the primary schools is continuous, but is of a much more advanced character. Plane geometrical drawing with instruments is added, and freehand drawing in outline from models and objects, prints and the actual models and objects being used in conjunction. Thus a beginning is made in representing the three dimensions pictorially. Some instruction is given in historic ornament and decorative styles. Geometry forms the basis of the work while the instruction is rational, not dogmatic.

* * * * *

"The subjects taught in the grammar schools, with the exception of plane geometrical drawings, are continued in the high schools, the models and objects, however, being drawn in light and shade as well as in outline. More emphasis is laid upon making industrial designs for a particular purpose, as for jewelry, tiles, fans, lace, calico, prints, pottery, etc. Instrumental, perspective, and mechanical drawing are added, also drawing from the cast and from nature; also botanical analysis for industrial design and painting in water colors. The pupils are not confined to one medium, as the point, for instance, but are taught to manipulate different materials—pencil,

¹ Clarke, Isaac Edward. In "Art and Industry," U. S. Bureau of Education, Washington, D. C.

chalk, stump, etc. Geometry still forms the basis of the work. The instruction is varied and rational, the aim being not to make proficient in any one thing, but to impart a taste and knowledge, and a skill of universal utility."

It is interesting to note the character of work as taught in Cleveland at this time. "About one hour and a half each week is devoted to it. The pupils begin as elsewhere with the line drawings on blackboard and slate. Next they are required to draw simple objects and to describe them and their positions both in writing and orally. From this they pass to drawing objects from positions verbally dictated by the teacher and finally to drawing from the objects themselves in various positions." The course of instruction briefly detailed was somewhat as follows: "During the second school year, the children are exercised in drawing a square and a cross in perspective and in different positions. In themselves the objects are thin, and they are treated as though they had no thickness. Pupils are also exercised in writing descriptions of a square placed in two positions in answer to the following questions:

"(1) What is figure one?

"(2) Why do you say it is what you say?

"(3) What does figure two look like?

"(4) In what position does it say the object is?

"(5) What makes it look as if it were turned?

"The work is the same during the third school year.

"During the fourth school year the work is not changed, except that the square and cross are combined and a hole is cut in the square allowing more intricate arrangements.

"During the fifth school year the work of the fourth is continued.

"During the sixth school year, the square, cross, and square frame are combined in one representation.

"During the seventh year the pupils are exercised in drawing two squares (square frames), cross, and model table combined. The objects are placed in all sorts of positions.

"During the eighth school year, sundry objects, such as wheels, carts, chairs, and desks, are drawn in perspective outline. This is application of perspective principles previously learned. Written descriptions of the drawings of the cross are continued."

It will be seen that drawing was confined closely to a few geometric shapes applied to certain objects of use and for a greater part of the time, drawn with no thickness. In fact, the report condemns this work for two reasons: First, because with a systematic gradation, "It is made to depend too largely upon a single minor feature of different positions in which a square and cross (no thickness) can be placed." Second, "It may be further observed that the instruction is bad, even if it should be granted that it should begin as it does, with perspective, since it takes rectangular before circular objects."

The report in one place speaks rather disparagingly of the work of Cincinnati. The following quotation not only serves to show the ability of the judge, but the trend of the subject. "For about two years children have no practice in drawing curves, though during the second year the average age of the children is 9 years and 3 months. They are mainly exercised in drawing squares, dividing their sides proportionally and filling them with symmetrical patterns. In the second year half-tint makes its appearance and is persistently used throughout the rest of the course. When properly used, half-tint increases the pleasing effect of the drawings, but it is a great consumer of time for which it makes no adequate return. The pupils should be exercised in the uses of half-tint only enough to learn its proper application. One can not help thinking, however, that in the Cincinnati schools, more than one-half of the time devoted to drawing is spent in half-tinting."

The conclusion, as summed up by the critic, Mr. Charles B. Stetson, is one which is applicable at the present time and may be of interest to all teachers. "No one can

fail to observe after a survey of all the drawing exhibits that satisfactory results have been obtained only where drawing has been looked upon as a serious and important matter; * * * where a rational and comprehensive plan, justified by the best experience and not some pretentious novelty of limited scope has been adapted and steadily followed; and where, instead of pinching in every possible way to save a few pennies, those in authority have made suitable efforts to instruct the teachers to provide the schools with proper appliances for the use of both teachers and pupils. Indeed, unless a city or town takes a broad and intelligent view of the matter and resolves to do good work, patiently waiting for the fruit in its proper season, there can be no doubt that it is better to do nothing at all with drawing."

The results of the centennial exhibit were by no means satisfactory. While cities representing the States of Ohio, Indiana, Connecticut, New Hampshire, Rhode Island, Maine, New York, New Jersey, Pennsylvania, Maryland, Michigan, Wisconsin, Illinois, Minnesota, Iowa, Missouri, Tennessee, Louisiana, and the District of Columbia displayed exhibits, there appeared to be little or no systematic teaching in the average school system. The following conclusions of Mr. Stetson serve to show the extent of acceptable work and state the general feeling with regard to the work of Massachusetts:

CONCLUSION.

All the exhibits of elementary drawing have now been described in detail from notes taken upon the spot. It is seen that in teaching drawing in the United States several distinct and systematic plans are followed—plans of very unequal merit. Many towns and cities follow no system whatever, though they aim mainly at pictorial effect, and the drawings are usually executed from flat copies, which consist of landscapes, marine views, houses, ships, animals, birds, insects, fishes, flowers, etc., and are commonly of the most wretched character. All such drawing is worse than none. East Saginaw, Mich., appears to have striven the most zealously to obtain good results from this irrational, unprofitable method. As a State New Jersey has given it the widest welcome. Nearly all the towns in New Jersey make an exhibit of drawing, but hardly one of these exhibits shows the slightest sign of an industrial feature or of systematic instruction.

There are many cities and towns whose exhibits show that they have made a good beginning in drawing. The work done in the public schools of Indianapolis and Fort Wayne, Ind., is decidedly commendable. The exhibit made by Columbus shows that drawing is better taught in that city than anywhere else in Ohio. A large part of the display made by St. Louis is deserving of commendation; and so is the limited amount of work shown by Chicago. Milwaukee deserves great praise, and so do Washington, D. C., and Syracuse, N. Y. All things considered, however, the highest praise for much well-done work in a short time should be given to the little city of Augusta, Me. It is worthy of note that in every city or town where really commendable results have been secured the instruction displays some rational novelty that is worthy of imitation. Pittsburgh is an example of a city that has begun right, but lacks the courage to go resolutely forward. Of all the drawing exhibits made by cities, that made by Detroit is the most trivial and unpromising. The exhibits made by the cities and towns of Massachusetts are the only ones that illustrate a full and systematic course of instruction in drawing worthy to be compared with the best in similar European schools.

The effects of the exhibits were far-reaching. For the first time leaders in education and thousands of teachers were enabled to view

results of their instruction by means of comparison. Since 1821, when "Master Fowle" so ably introduced drawing in his Boston school, the subject had been receiving more and more attention and not only had gained a place in many schools but had become of equal importance with the three R's. Yet during all this time there had been no general recognized method of teaching. Some believed it of value to the industries; others considered it essential as a cultural training, and it has been shown how the professional's viewpoint was emphasized in Philadelphia. Now it was possible to compare the results of these hit-or-miss methods, and it was with much surprise that they were viewed.

In one respect at least there was some similarity throughout. The drawing commenced with dots, lines, and geometric forms, and the basic idea appeared to be to have the pupil see these forms correctly and draw them. But in most instances there was apparently a total lack of progression, through systematic steps beyond the early grades. As has been shown, Massachusetts took the lead on this score, under the able leadership of her director.

For 12 years Walter Smith carried on his task of advancing the cause of art education. His pedagogy, his pleas and arguments, his aims and ambitions, and his wonderful results are all interestingly told in his annual reports to the State board of education. Other States and cities and other supervisors and teachers turned to him or his reports for guidance. As a result of his wide experience at institutes and in school systems, he developed a set of exercises which were published and which were in great demand. Models and objects brought from England were in constant use, and these, with textbooks, began to be put on the market by the firm of L. Prang & Co.

But notwithstanding his influence, his popularity, and his great ability, adverse influences gradually crept in, and the last years of his directorship were extremely trying ones. Perhaps through outside jealousies, perhaps through ignorant interference, perhaps on account of personalities the situation eventually became so complex that in July, 1882, Walter Smith ceased to hold his positions of State art director and principal of the Normal Art School, and returned to England as head master of the art department of the Technical College at Bradford. But the great work he had accomplished was destined to continue, notwithstanding the absence of the fountain head. By this time strong teachers and supervisors had been graduated from the Massachusetts Normal Art School; many courses and outlines, based, however, on the Massachusetts system were being successfully worked out; superintendents and educators throughout the country were interesting themselves, not so much with the value of drawing as a school subject, but more as to the method of presenting it.

As introduced in Massachusetts, drawing was expected to eventually so influence the industrial product that this article of manufacture would compare favorably with foreign goods. Observation and technical proficiency were the primal aims, purely for the sake of the industries. The name itself implied this, for it was termed "industrial drawing." It consisted largely of straight and curved lines and geometric forms.¹ In the early eighties other and equally valuable aims in drawing were proposed with success. The broader term, "art," came into prominence. Quoting from a teacher's manual published in 1882, the following ideas are set forth:

Art education, even for little children, means something more than instruction in drawing. It comprehends the cultivation of the eye, that it may perceive form; of the hand, that it may represent form graphically (drawing); of the mind, that it may receive and express ideas in regard to form. It would seem appropriate, then, that these lessons should be called "form lessons." Teachers should consider them as such, and should direct their teaching to creating in the minds of their pupils a correct conception of simple forms, rather than to giving instruction merely in drawing.

It is apparent that at this time the child, rather than the industry, was receiving greatest attention. This spirit was fostered more and more by the developing subject of child study. Furthermore, a spirit of correlation may be noted, for we read: "The connection of these form lessons with the other primary studies, language and number, should also be noted." Color study received little or no consideration at first, color names being the extent of the teaching. Now, however, some consideration of the color of nature and of color in design was being attempted, for design itself was becoming less formal and less geometric. But the awakening was hardly accomplished when in 1893 the great World's Fair at Chicago gave

¹ The books called "Krusi's Drawing," published by D. Appleton & Co. in 1880, were of this nature. This most interesting series on "Freehand and Industrial Drawing" by Hermann Krusi, instructor in the philosophy of education at the Normal and Training School, Oswego, N. Y., formerly teacher of drawing in the Home and Colonial Training School, London, consisted of a "Synthetic Series," an "Analytical Series," a "Perspective Series," and an "Advanced Perspective and Shading Series."

Accompanying each series was a manual for teachers which contained the "Inventive Course," a series of lessons designed to tax the inventive faculties of the pupils. The books for the pupils were called the "Applied Course," and simply applied in copy work the ideas gained from the manual. Thus each series included the "Inventive and the Applied Courses."

The following description of the series, taken from the first book, the "Inventive Course—Synthetic Series," is of much interest:

Part I.—Synthetic Series.—This series is designed for the primary departments of schools and for those commencing the subject of drawing. It deals with outlines only (straight and curved lines and drawing from dot to dot), and is especially calculated to stimulate the observing powers, give freedom to movement, and cultivate.

Part II.—Analytic Series.—This is specially adapted to the wants of the intermediate schools and to those who have acquired some skill in inventing and imitating forms. It deals with outlines, but in a more finished state than Part I, and it develops ideas of proportion and accurate division.

Part III.—Geometric Series.—This series introduces the laws of perspective, and hence is adapted to the more advanced classes. It deals with perfected outlines and develops the principles upon which advanced art is founded. It introduces a great variety of architectural work, and thus gains an additional value from the information which it contains.

Part IV.—Geometric Series.—This series deals with the principles of geometric drawing and with shading. It develops the laws of light and shade and applies them to a great variety of finished work. This series is adapted to the wants of the senior and high schools and to those who have made a considerable proficiency in drawing.

Other books published by D. Appleton & Co. at this time were Krusi's Industrial Series, Otis's Drawing Books of Landscapes and Animals; Coe's Drawing Cards and New Drawing Lessons; Coe & Shell's Elementary Drawing; and Worthens's Rudimentary Drawing.

opportunity for all to observe these newer tendencies. Here wall after wall was lined with exhibits from not only the larger cities, but small towns from all over the United States. This effect was as striking as the whole fair. Newer forms of architecture, wonderful effects of landscape gardening, fresh wonders in American sculpture and individuality in the minor arts, displayed everywhere, were but echoed in the public-school work. New and better papers, individual water colors, and constructive materials, placed on the market by growing publishing houses, had produced a marked improvement in the taste and display of the drawing work, and it was plain to be seen that the old industrial drawing had grown to a thing of the greatest educational importance.

Barely 10 years later, in 1904, a second great event, the St. Louis Exposition, commemorating the Louisiana purchase, took place. Again a wonderful advance in the development of art education was seen. The old straight-line work had almost entirely given way to the æsthetic wave of beauty which had swept the country.

Many of the effects of this desire of beauty acted to the advantage of the drawing done in the schools. This the exhibition showed in the higher grades, where the models offered were no longer the geometric or so-called type forms of a dozen years before. Everywhere appeared an effort to secure objects, interesting both in line and color, and there was an evident effort to teach color by the use of it rather than through the older rigid approach by the way of the tints and shades of a color chart.¹

The drawing with the pencil continued; charcoal, crayon, and water color were much in evidence. Illustration by means of crayon and paper cutting appeared to be a favorite form of work in the primary grades. The constructive work had now become a part of the course for the drawing supervisor.

In 1876 the Russian exhibit of manual training had so stimulated the country that for the next 15 years this subject developed with great strides. Following rapidly the more gradual growth of the subject of drawing, it quickly dropped the earlier form of an unapplied exercise, much in evidence throughout Europe; and at the Columbian World's Fair exercises consisted of such objects as a coat hanger, sleeve board, box, etc. The simpler forms of handwork had, meantime, become more practical; and the early geometric shapes made of splints, clay, and cut paper gave place to folded chairs and furnishings for the doll house, weaving exercises in colored paper, and modeled nature forms.

The next decade saw still further changes, and at the St. Louis Exposition in 1904 the beginnings of the so-called arts and crafts movement appeared. By this time, too, the drawing teacher felt the need of an outlet in his work through the shop, and the manual training teacher was impressed with the need of beauty in his product. Such

¹ Art Education in the Public Schools of the United States, edited by James Parton Haney.

forces, working toward the same end, must of necessity approach the desired result; and furthered by the craft phase of work, such results soon appeared. Notwithstanding the early tendencies on the part of drawing and manual training teachers to work separately and quite apart from each other, the Jamestown Exposition in 1907 saw united efforts in the attempt to produce worthy industrial art products.

To assist in this direct application of the drawing, new materials were continually being introduced and old materials were being treated in new ways. Raffia, reeds, and yarns were produced for weaving; leather became at once a medium for more advanced forms of design; sheet metal and the use of the finer metals and semi-precious stones were introduced; clay was built into decorative vase forms and not only fired, but fired with glazes; the early paper models became practical paper and card board problems, involving the making and decorating of real books; and wood itself became a new medium when treated with colored stains and burning tools.

Meanwhile serious attempts were being made to introduce the subject of picture study. By means of penny prints of all the best paintings, masterpieces of sculpture, and early types of architecture, such study became not only possible, but developed with promising rapidity. The Chicago Fair first displayed the plans of such work, and each succeeding exposition showed increasing use of pictures of the masterpieces of art.

B. AIMS AND SCOPE IN ART TEACHING.

Such a history as the foregoing, short though it may be, is nevertheless of deep interest to the student of art education, for it serves to show how some ideas of the early advocates of drawing were shortly thrust aside, and gives conclusive evidence that others were sound and are of practical value to-day. A comparison with these early principles, as stated by Mr. Charles B. Stetson, the art critic at the Centennial Exposition of 1876, will serve to emphasize this statement:

Mr. Stetson says:

The general principles, having the approval of the safest authorities and widest experience, to which principles all instruction in elementary drawing should conform, are, unless I greatly misapprehend, as I now state them.

ESSENTIAL FEATURES OF GOOD INSTRUCTION IN DRAWING.

1. Drawing calls for no exceptional treatment. The instructions should conform to those general pedagogical principles which hold good in other studies. Without such conformity the best results can not be secured. No one, however skillful with the pencil, but lacking the teacher's art, can give good instruction in drawing.

2. The foundation of all instruction in drawing, whether for industrial or artistic purposes, should be laid in the forms, facts, and principles of geometry. If not so

laid, there can be no scientific certainty, but in all things there will be indecision and vagary.

3. Since the representation of two dimensions is so much simpler than the representative of three, drawing should begin with the former, not with the latter. And as the forms of plane geometry are the simplest of all forms, they should be first drawn.

4. The pictorial representation of present solids by the free hand should be carefully distinguished from the representation of absent solids by instrumental perspective. The forms of solid geometry, being the simplest of all solids, should be first drawn; and in the free-hand representation the circular solids should be taken before the plane-sided. Skill in rendering the literal form should be acquired before anything is done with light and shade.

5. The orthographic representation of the three dimensions for mechanical purposes should begin with the geometrical solids drawn as wholes, in sections, and otherwise. This being an admirable discipline for the imagination, it should be regarded not simply as a professional variety of drawing but as good for all.

6. The representation of geometrical forms should be followed by the drawing of conventional ornament and artificial objects. These are next in order of difficulty. Flat ornament, calling for the representation of only two dimensions, should precede ornament in relief.

7. The drawing of natural forms should follow, not precede, the drawing of conventional forms. Such is the order of difficulty, and such, for other reasons, is the true pedagogical order. He who has first drawn geometrical and conventional forms takes larger views of nature, gives less heed to irregular surface details, and more heed to the general form and to the great features of organic growth.

8. Elementary instruction in drawing, even if only industrial results are sought, should not wholly omit the human figure, but should take it after ornament. In no other kind of drawing is a rational pedagogical treatment so essential to success, there being so many difficulties to conquer, while the learner is so readily deceived by faulty results. For the purposes of manufactures much attention should be given to drawing the figure in unpictorial outline—that is, without perspective effects, and without light and shade.

9. While one is learning to draw, he should at the same time receive instruction in those principles of industrial design which should be observed in designing both the forms of objects and their decorations. Most of these principles are so simple that they can be readily comprehended by the youngest grammar-school pupils, and some of them by pupils even younger. The acquisition of technical skill of hand is accelerated rather than retarded by the study of design, as this adds so much to the interest of the learner.

10. Instruction in design should attend, first, to the use to which the object is to be put; next, to the material of which it is to be made; then to the proposed mode of manufacture. What is required by each should be pointed out. Every use has its peculiar requirements; a design well adapted to one material is poorly adapted to another; what can be done by one mode of manufacture is impossible by another.

11. The instruction in design should be general, not professional; the details of applied design being omitted in common schools as the details of applied arithmetic are omitted.

12. Of the four kinds of ornament—linear, conventional, imitative or pictorial, and grotesque—linear ornament should receive the first consideration, because it is the simplest.

13. The drawing of conventional ornament should precede the drawing of imitative or pictorial ornament. While both have to do with natural forms, conventional ornament attends only to regular general features, and so is the easier to draw, and the better adapted to common manufactures.

14. In conventional ornament the organic growth of the natural forms employed should be scrupulously followed. If, for example, the leaves in nature are arranged alternately upon a stem, they should not be represented in conventional ornament as growing in pairs.

15. All conventional ornament should be characterized by symmetry and rhythm. Without these there is no true ornament. The decorative unit should be first symmetrically arranged, and then rhythmically repeated. Symmetry and rhythm lend themselves in a peculiar degree to the requirements of common manufactures.

16. Elementary instruction in drawing should give little or no attention to purely imitative ornament. To say nothing on the score of questionable taste, this species of ornament does not readily lend itself to the manipulative requirements of common manufactures, whether it is applied in colors, by carving, or engraving. Nor should grotesque ornament receive more than a passing notice at this stage.

17. The study of historic ornament should form a prominent feature of elementary drawing. While the pupil is learning to draw, and is acquiring a knowledge of the general principles of decorative art, he should at the same time be taught clearly to distinguish between the great styles of ornament.

18. In the public schools the instruction in drawing, below the high-school grade, should be given by the teachers who give the instruction in the other branches. The work can be neither so well nor so cheaply done by special teachers.

19. Both for the sake of general culture and for the sake of obtaining, in the end, the best special results, the instruction should be characterized by variety in the things taught, in the materials used, and in the methods followed. There must be breadth, not narrowness. The emphasis should be laid (1) upon knowledge of principles, (2) upon rapidity of execution, (3) upon fineness of work. The very great mistake is often made of laying the main emphasis upon fineness of work, especially at the outset. Nearly all beginners, if left to themselves, draw too slowly; they think too much of nice execution, too little of the idea to be expressed.

20. The greatest care should be exercised in providing the pupils with suitable drawing materials. True economy, if economy is to be judged by results, requires that everything should be of the best when the improvement of the taste is involved. True economy also requires that the aim should be to save the time of pupils, and not a few pennies, when it comes to a choice between the two.

These principles agree or differ with our modern ideas as follows, the paragraphs numbering the same in each case:

1. Though "general pedagogical principles" may differ somewhat in our modern course of study, the statement that drawing calls for no exceptional treatment is decidedly true and can not be too strongly emphasized. That the teaching of drawing should be in conformity with the teaching of other subjects and that the teachers' viewpoint should obtain are equally true.

2. Herein modern methods greatly differ. The mechanical and unrelated geometric principles have given way to the freedom which comes from broader aims and deeper educational motives. Our present drawing being presented from the cultural as well as practical viewpoint, rather than for purely "industrial or artistic purposes," necessarily demands less mechanical exactness, though quite as much care in rendition.

3. As in other subjects, abstract problems have given place to concrete and related work of definite interest to the pupils in the several

grades. Thus the geometric form no longer commences the work in drawing, for in its place are those objects which appeal at that age to the pupil. As in the early day, two dimensions are called for at first.

4. There are still to be found evidences of the "geometric" or type solid still in use. Modern training is, however, rapidly substituting for them more interesting and often really beautiful vase forms of numerous colored glazes.

5. Here again the more practical "working drawing," made directly from the object with all necessary views, is sharing equal place with the projection of geometric solids. Imagination is stirred in other ways than this, as is shown hereafter.

6. The "conventional or historic ornament" referred to has likewise been allowed to disappear before the onward movement of the arts and crafts, which demanded original and individual suggestions for construction and applied design. And "ornament in relief" was discarded with the early copy book.

7. This is perhaps one of the most interesting of all the principles so carefully stated by Mr. Stetson. It is so diametrically opposed to our modern procedure that it is highly amusing. So completely have we digressed from those early teachings that we presume to take the liberty of making our own conventional forms from nature, which we draw first, not last. And certainly, so far as the elementary grades are concerned, the larger views of nature appear not to have been retarded, but rather strengthened.

8. The "figure" no longer becomes essential as a special phase of drawing, as the modern educator considers it beyond the average public-school age, except in a few special and advanced high-school courses. Under the head of pose drawing some figure work is taught in the grades, however, but not for the "purposes of the manufactures," but rather that the big truths of action and proportion may be studied, to be used again in the illustrative drawing.

9. This paragraph is equally applicable to-day, though Mr. Stetson might show much surprise at the changed character of the design work.

10. If the truth of this statement were more strictly adhered to to-day, the work would be greatly strengthened. These principles are now, as then, fundamental in the teaching of design.

11. This is another amusing paragraph, for our later teaching, adhering to the statement that design instruction should be general and not professional, nevertheless deals in applied design as the preferred method of procedure, even as arithmetic itself is taught.

12. Our modern school vocabulary still includes the term "conventional," but excludes all others. Modern conventional design, however, is in striking contrast to that of 1876, in that it consists to a much greater extent of individual adaptation of previously drawn

nature to given problems, whereas the earlier forms were largely dictated and copied exercises.

13 and 14. Both these statements are equally valuable for present design instruction, and should be enforced as early as possible.

15. Though such decided directions for the treatment of decorative units do not fully accord with present methods, in general this statement holds good to-day.

16. These suggestions of both "imitative" and "grotesque" ornament have been practically lost sight of for 20 years or more.

17. Many supervisors and teachers continue to plead for a return to some historic ornament, which has gradually been discarded from the crowded curriculum. This tendency is an appeal to an historical study, rather than to a return of the earlier method of tedious and painstaking copy of the great historic examples. This appeal deserves more recognition to-day.

18. The teaching of drawing in the grades by the supervisor is a matter of short duration. The truth of Mr. Stetson's statement on this matter is being repeatedly recognized.

19. Every supervisor would do well to read this paragraph and remember it in his teaching. The modern passion for exhibition work has lead directly to the aim of "fineness of work" rather than knowledge.

20. Could the early critics view the modern schoolroom, with the latest equipment and materials, they would surely feel that this last and final statement has borne fruit, for certainly in the drawing work the best of to-day is often considered none too good.

TWO BROAD AIMS, CULTURAL AND INDUSTRIAL.

The above comparisons hint at the general purpose of modern art teaching.

The following, taken from the most recent Cyclopedia of Education,¹ clearly defines and generally includes the reasons and aims for the teaching of drawing:

(1) Drawing is a language of form. By means of it the contours and colors of all visible objects, their structure and enrichment, and their interrelations in space may be defined and displayed. It is therefore the graphic recorder of scientific fact, the primary means of expression in the constructive and decorative arts, and the chief medium of the artist in making known his visions of beauty; hence the ability to understand and to make use of this language is of value to all.

(2) The practice of drawing promotes (a) close observation, thus insuring clear mental images, the material of thought; (b) muscular control or skill of hand, a prerequisite in the practice of any craft; (c) a knowledge of the elements of beauty, in nature and art, the basis of design, and the ground of intelligent appreciation and taste. Hence, drawing should be practiced by all.

¹ Bailey, Henry Turner, Cyclopedia of Education. Monroe.

(3) The study of drawing opens to the mind the wealth of human treasure in the form of architecture, sculpture, painting, and the various handicrafts, through which man has expressed his ideals and aspirations, and leads to a keener appreciation of nature as an inspiration to art, thus vastly increasing the pleasure and the significance of life. It should therefore be free to all.

Two broad aims have come to be universally recognized in public school drawing work, the professional or industrial, and the cultural. "Direct the energies that the results may have as practical, educational, and cultural effects as possible," says one supervisor.¹ In general there are two broad classes into which modern civilization may roughly be divided. They are the consumers and the producers. All people may be classed under the first, but comparatively few come under the second, and so far as the arts are concerned those few require natural endowments not allotted to the average. It were folly therefore to educate all pupils in drawing or art purely from the standpoint of the profession, the training of producers.

For the average child, then, the cultural aim is most suited, and the later educators are recognizing that "drawing for the industries," and fine technical execution are not primarily to be sought. "The object is not to get perfect results on paper, but to train the senses, mind, and hand to work together."²

In elementary schools only rudiments of the arts can be taught, such as the beginnings of free-hand drawing; simple forms of constructive work and problems in design, especially as related to common things; and an awakening of some response to beauty in nature and art.³

Such statements, coming from eminent authorities, are voiced by others as follows:

To the average citizen a century ago it meant little, but to-day the homes and industries of our great country are being molded daily into beautiful places for rest or work, and our great cities are gradually developing from ordinary commercial centers, into cities of great art and architecture, and the general laying out of the streets and buildings in a beautiful and systematic way is being encouraged. So it is left with the drawing department to instill, early, into the minds of the boys and girls, the future citizens, from the smallest child to the oldest pupil, a love of the beautiful in nature and art, a keen and accurate perception of the difference between the beautiful and ugly, a good knowledge of color harmony, and the underlying principles of modern design.⁴

The purpose of the work in the primary grades is to develop in the child mental, manual, æsthetic, and disciplined strength. The mental training aims to give power to invent, to see relations, the power to judge distances and to discriminate between sizes and lines. The manual training aims to give general dexterity and skill in handling special media and tools. The æsthetic training aims to create taste through knowledge of color, and through knowledge of fitness of material to purpose. The

¹ An. Rep., Ansonia, Conn. Daisy C. Allen, superintendent.

² Teacher's Manual—Course of Study for Common Schools of the State of Washington.

³ Sargent, Walter. *Fine and Industrial Arts in Elementary Schools*. Ginn & Co.

⁴ City school report, Columbus, Ohio, W. D. Campbell, supervisor.

disciplinary training aims for neatness and accuracy in execution, patience, perseverance, and obedience to direction. Summarized, drawing in the primary grades is a means and not an end; it is another form of expression for the various subjects of the curriculum; the child's interest in doing things is turned to educative account. The classroom teacher, because of this interrelation guides the child's individuality, his interest, his expanding power."¹

We are rapidly learning to think of drawing, construction, and design not as special subjects, but as an integral part of a well-organized course of study in public schools, without which there is an incompleteness that nothing can supply. Our ideals in teaching should be (a) to seek progression in a pupil's training from year to year and from month to month; (b) to teach the child to think for himself and to express his ideas clearly to others; (c) to influence industrial work through teaching the principles of design and the use of materials, so that the pupil may interpret what materials become in the hands of the individual worker; why they are handled thus and so, and finally what becomes of the product, thus creating a demand for that which is best in production; (d) to gain an appreciation and expression of good taste in surroundings (in dress and the home); (e) to help the pupil to find himself and thus enable him to fit into the right place.²

DRAWING A GENERAL, NOT A SPECIAL, SUBJECT.

The thought of this last reference, that drawing, the manual arts, is no longer special or unusual in a school curriculum, is a further indication that the subject has completely changed from its original aspect as interpreted so largely by Walter Smith. With its broader cultural aim, it has permeated other subjects until it—

Has come to stand for much more than instruction in the delineation of form. Drawing to-day is but one chapter in the great volume which is being compiled in our public-school courses of study. We may name this volume "Art Education," and we shall find that it contains many chapters besides drawing, such as painting, design, manual training, shopwork, the crafts, domestic art, industrial education.³

Thus drawing has come to include all these branches of training and the subject has rightly been renamed "Art Education" and the "Manual Arts." The idea of general, rather than special, education prevails. Special work may be taught, but general results must be expected, reached largely through such means.

It is true that art instruction must teach children to draw. It must do this for the same reason that instruction in reading must teach children to recognize and form written words, to combine words in sentences, and to compose sentences in paragraphs for the expression of thought. Drawing is expression, just as written language is expression. But ability to draw is not the only result for which art instruction should aim. There is another result as much greater in value to the average man as the ability to enjoy good literature is greater than the ability to use grammatical speech; and that result is the ability to perceive and enjoy beauty wherever beauty is manifested. It is in its power to stimulate good taste and to open the "gate of appreciation" that art education justifies the time and money spent upon it. If we can penetrate to the homes of the children and establish there the refining influences of quiet colors, good proportions, simple, sincere architecture

¹ City school report, Newark, N. J., Eva E. Struble, supervisor.

² Paper by Mary B. Hyde, Pratt Institute, N. Y., director normal department.

³ Paper by Bonnie E. Snow, Dept. Normal Art, N. Y. School of Fine and Applied Art.

and harmonious and appropriate furnishing, we shall have little need of reformatories and penitentiaries.¹

The broad and general purpose of culture through art education may be roughly subdivided into three distinct aims which have already been quoted and which are universally agreed upon. Such an education should train (a) in expression, (b) in observation, (c) in appreciation.

DRAWING TRAINS EXPRESSION.

Drawing has always been considered the universal means of expression. This has been a common argument for those who have plead for its adoption in schools. To be able to express one's ideas graphically will always be of general value to humanity, but the modern trend has given rise to a much broader conception, directly in keeping with the cultural purpose. This conception deals with the child himself, his thoughts, his aims, his ideals; and the process of expression, drawing, or designing, or making is but the material effect of his inner consciousness. His expression, then, limited only by the materials at hand, comes from his quickened brain, which is the goal of all education. As an outward expression of the mental processes, the value of the study of art lies in stimulating the finest ideals and in giving command of the best means of expressing them. Miss Snow writes:

The essential point is to present all classes of material as a basis for the exercise of the principles of design, not for the sake of design, but for the sake of establishing the *right habit of thinking*.

We have an unqualified respect for a person of "good judgment." What is good judgment? It is a thorough understanding of conditions and a definite idea of what is best to be done under the circumstances. This mental adjustment can be applied not only to the arrangement of units over a surface, but to the arrangement of furnishings in a house, to the planning of a school program, to the laying out of a garden, or to the wise management of a house full of children.

The aim of art education should be to enable the student to meet any set of conditions in the finest manner possible. Art is not representation; art is the best way of doing one's work.

Miss Emma M. Church² offers a similar interpretation which voices the ideas of the leading modern art educators:

It seems clear that the very basis and center, the pivot of the whole education process, not only in the arts, but in the sciences as well, from the first grade even to the universities, must shift from a point without, from external instruction of facts and narration of facts, to a point within the student's consciousness, which we may call interest, self-activity, love, veneration, or sense of beauty, and which can be trained alone by a conscious effort on the part of the student to think and feel nobler and to make this better self-communicable by progressively more beautiful expression in as varied forms as possible—in thought, conduct, work, and play.

¹ Paper by Bonnie E. Snow, Dept. Normal Art, N. Y. School of Fine and Applied Art.

² Director of School of Applied and Normal Art, Chicago; former Director, Chicago Academy of Fine Arts.

The ennobling of the emotional nature seems to be the logical initial step in the unfoldment of the moral self, and it does not seem to argue any detriment to the development of the powers of reason or of any of the intellectual faculties, but rather puts them into their natural places as a means of education and not its end, and because art is the natural means of the emotional nature's expression, and by art let us understand all of them, and because the emotional self is the origin of conduct it seems that the arts must be the first step in education that trains for a better sense of proportion and for better morals.

In the training of little children we must forget that we are specialists; we must remember that it is not our business to turn out a race of cooks, carpenters, foundry-men, picture painters, arithmetical geniuses, or what not, but rather to know that our specialties are only the different languages through which the inner self speaks and to be ready to help the child to the best use of our special art when he has something to say that can best be said in its particular terms.

DRAWING TRAINS OBSERVATION.

Ideas seek expression in terms of actual experience. Thus the drawing is expressive of something already seen; the design consists of units composed of original or dictated motifs made from actual objects; the project is constructed on the same general principles previously observed. Keen and accurate observation, then, is fundamental to art and is an asset in the broadest sense. It calls for close analysis and stimulates the initiative of the discoverer.

If in teaching the subject we think of it as seeing lessons, rather than drawing lessons, we may be more lenient in our demands for technical results, and if these lessons train our pupils to see the appearances as well as the realities of form and color; to cultivate their judgment regarding sizes and proportions, to teach them to study things structurally and to lead them to seek for beauty in nature and in art—with just enough of the technique of drawing to supply a means of expression—we are doing all that is possible in an expenditure of an hour a week.¹

To observe a simple object of nature, to visualize it, and to recall it again by means of graphic or other expression with sufficient accuracy to produce a likeness, added to which is personality in the case of the artist, is a training of utmost value in any walk of life. Furthermore, to be able to adapt its principles or to express by means of the thing itself a new conception for a special need is to cultivate that vital and initial sense of the creative—an instinct lying dormant in the average person.

The chief aim throughout the art work is to develop in the pupils the power to respond to beauty of line, form, and color as a basis for an intelligent interest in art. On its broader or appreciative side art is not directly concerned with conduct and therefore can not be said to have a direct ethical aim. Nevertheless a sense of the beautiful and a sense of the ugly may apply to forms of conduct as well as to form and color in the realm of fine arts, and these may therefore serve as contributory influences in determining right action. There is no intention of claiming that this influence of art upon conduct is in any sense inevitable. On the contrary, there

¹ Miss Katherine M. Ball, supervisor of drawing, San Francisco, Cal.

may be no connection whatsoever; but it is held that the teacher of art may take advantage of opportunities to generalize the feelings of his pupil for both the beautiful and the ugly in such a way as to cause these feelings to reenforce moral conduct. It is true also that any teacher who takes the artist's view of his work may use his subject as a medium for imparting a general appreciation of appropriateness, order, simplicity, and sincerity in matters of everyday life. Therefore, while these ethical interests are clearly not wholly distinctive of art, they form for the teacher of this subject one of his great opportunities.

True appreciation of a work of art is possible only to those who have cultivated visual sensitiveness, and the surest, if not the only road to visual discrimination, lies in the direction of carefully guided practice. The effort to draw or to design leads directly to clear observation of the master efforts of the artists. Technical instruction, therefore, is given as much with a view to developing an appreciation of art as to creating proficiency. The aim is, however, to give some power of expression to all, while the few who are gifted lay a foundation upon which they can later build.

The value of art training lies far less in the acquisition of a body of facts than in the gradual growth of the power to see and to feel pleasure in beautiful relations of form and color.¹

DRAWING TRAINS APPRECIATION.

Culture at once assumes appreciation on the part of the possessor. The finer the sense of appreciation the more elevated and refined is the quality of culture. The one, therefore, directly makes for the other, and both are attributes essential to the best education. Appreciation as applied to master creations of the artist in architecture, sculpture, painting, to the forms of minor art seen in the works of the craftsman, to nature, to the very environment of the person himself, is the third aim in art education. In other terms, art must function with life, must bring beauty into everyday living. It must come through appreciation; through the knowledge of what constitutes beauty, of how we may recognize it and of how we may obtain it. This aim is well presented by James Hall² as follows:

The chief aim throughout the art work is to develop in the pupils the power to respond to beauty of line, form, and color as a basis for an intelligent interest in art. True appreciation of a work of art is possible only to those who have cultivated visual sensitiveness, and the surest, if not the only road to visual discrimination, lies in the direction of carefully guided practice. The effort to draw or to design leads directly to clear observation of the master efforts of the artists. Technical instruction, therefore, is given as much with a view to developing an appreciation of art, as to creating proficiency. The aim is, however, to give some power of expression to all, while the few who are gifted lay a foundation upon which they can later build. The value of art training lies far less in the acquisition of a body of facts, than in the gradual growth of the power to see and to feel pleasure in beautiful relations of form and color.

Thus it will be seen that not only has the character of work changed since drawing was first introduced in the public schools, but the aims and purposes have broadened and are based on the growth and development of the child rather than on an industrial need alone. Efficiency and initiative through education, rather than a material by-

¹ Miss Emma M. Church.

² Former director of art, Ethical Culture School, New York City.

product, are sought. A well-developed child is preferred to the fine drawing or well-executed taboret. Miss Ball aptly sums this up when she says:

If this teaching has made our pupils more alert mentally, keener in observation, more appreciative of the beautiful, and has given them that test of education "the capacity to attack new matter in the subject"—notwithstanding the fact that all have not become able draftsmen—we may justly feel that we have accomplished as much as is possible for educational art in public schools.

PRIMARY GRADES.

The general purpose having been discussed it remains to briefly define the specific aims for the various educational groups. The kindergarten classes consist of children from 4 to 6 years of age. Largely based on the Froebel and Montessori systems, the work develops the larger muscles and seeks to stimulate and organize the various senses. Drawing and handwork form a large part of the work, calling into use crayon and brush, color, building blocks, paper and cardboard, and various weaving materials. The fact that the art work of this educational group is under no special supervision in most schools has led to a wide variance of opinion with regard to the aims and scope, and has therefore duplicated many times the teaching in the first grade. The fault may lie with the grade teacher, who has perhaps introduced too elementary work for pupils having the advantage of the kindergarten training, but whatever the cause the work has yet to be properly related to the first-grade subjects.

Supervisors are generally agreed that the primary grades shall develop imagination, shall train in color discrimination, and shall develop a sense of orderly arrangement and good proportion. For this purpose much time is spent in imaginative drawing, in the illustration of stories, games, and events of everyday life, in the use of various hues of color, and in simple decorative arrangements.

Mr. Sargent writes:

Technical deficiencies and lack of knowledge are evident, but a purpose other than the correction of these is more important during these years, namely, to develop a readiness to illustrate ideas, however crudely, and a habit of using drawing commonly as a language. At this time objects placed before the children serve as a means of suggesting ideas, rather than as forms which are to be correctly delineated.

The constructive work seeks the same development, and pliable materials which do not by their manipulation hinder the imaginative thought are the ones used. Thus clay, yarns, building blocks, and the sand table are the freer materials for these grades. In design, Mr. Sargent again says:

Children have a feeling for rhythmic arrangements in repeating single forms indefinitely, as in borders and surface patterns, and show considerable ingenuity in making new combinations of given elements.

GRAMMAR GRADES.

As the child advances in years his perceptive faculties become more acute, his smaller muscles seek for greater development, and the stage of more extensive drill and practice has been reached. More truth and accuracy in observation are demanded, some originality, and a finer sense of appreciation in the use of decorative motives and materials are sought, and intelligence in the use of the harder and less pliable materials is cultivated. Training is continued to stimulate self expression. The child now becomes interested in the processes of his work, and the arts seek to promote this interest. At the same time repetition and drill for the sake of technical efficiency are urged.

Truth in representation grows with the child's discernment of conditions about him, and the work of the grammar grades develops the study of ways and means of rendering observations. The study of foreshortening and the appearance of things with reference to their position in relation to the eye enters into the course. Unlike older methods, however, principles are not taught, but rather the ability to observe keenly and to record accurately.

The construction work depends largely upon processes applicable in each grade. The elements of interest and individual demand have their bearing also. Woodwork with varied construction, metal work, leather tooling, pottery making, bookbinding, caning, and heavy cardboard construction are in use in the average schools.

In design a greater opportunity for finer discrimination is presented, and problems relate themselves to personal, home, and school needs. Fine types of objects and excellent pictures and prints are presented to the children, and a feeling of refinement in association with the better things exists. Thus the sense of appreciation is early stimulated, and from these grades continues through the high school. Mechanical drawing enters also into these grades and advances rapidly in the last two.

At the end of the grammar school the pupil leaves the eighth grade equipped with some "discriminating taste" for the better shapes in construction and the finer treatments in decorative ornament, with a developed color sense, with the ability to express his ideas with some degree of perfection in a variety of materials and ways, with an appreciation for the beauties about him and with a sane reason for it all.

HIGH SCHOOL.

For the average pupil the aims of art work in the high school are the same as those for the grammar grades. The work simplifies itself, however, into the single purpose of training the pupil to perfect his appreciative faculties. The technic of the work has been learned in the grades; the refinement of application and the refining of judgment and taste lies with these advanced years. Finer technic is

naturally expected, but with it also a keener sense of what is best in expression through art. This involves a much broader aspect of the work than can exist with the younger children. Personal and home decoration are practically studied, the history of the arts and their relation to civilization are discussed, modern illustration with a study of reproductive processes is considered, painting, sculpture, architecture, and the crafts are studied, and civic improvement is made the basis of practical thought. These studies are developed through the needs of the individual and his social activities. Posters, costumes, illustrations for the school paper, etc., enter into the work.

THE PROFESSIONAL OR INDUSTRIAL TRAINING.

In addition to such work as is given for the training of the average boy or girl, many high schools offer special courses having a professional or vocational aspect. Classes are offered in the fine art of painting, the industrial arts of jewelry, pottery, costume design, millinery design, commercial design, and mechanical drawing courses, including projection, working drawing, machine drawing, cam and gear drawing, topographical drawing and architectural drawing.

Such specialization is being slowly and carefully worked out in a number of the high schools of New York State and in New York City in particular. "The Washington Irving High School (for girls) has, during the year 1912, developed work of unusual interest and merit in connection with its vocational courses in art. This school offers in addition to the minimum requirement in drawing for academic graduation, a course in the study of commercial art, organized on a basis of 19 periods a week, and continued through the second and third years of a three-year high-school course."¹

Previous to this year courses were offered only in millinery and costume design, comprising two years of 19 periods a week.

In the High School of Commerce and the Commercial High School (Brooklyn) short courses in art related to the needs of the commercial student are offered.

The work is followed by all pupils for a year and a half, two periods a week. It is designed to teach the pupils to see the application of art to commercial design and to give them the power to plan an advertisement, to letter it, and to devise an harmonious color scheme.¹

C. ORGANIZATION, METHODS, AND OUTLINES.

Education in the arts has been accomplished by (a) State directors, (b) city supervisors and their assistants, (c) high-school teachers, (d) grade teachers.

(a) Three States, Massachusetts, New York, and Pennsylvania, have directors of art education.² The State Art Society of Minne-

¹ Fourteenth Annual of City Superintendent of Schools, New York City, Oct. 9, 1912.

² Massachusetts, James F. Hopkins. New York, Royal B. Farnum. Pennsylvania, Rose M. Fetterolf.

sota, to which further reference is made below, has through its director been of material assistance in promoting State art education. The State director in Massachusetts is also principal of the State Normal Art School in Boston.

The methods employed by these leaders are in many respects similar and may be summed up as follows:

- (1) Personal visits to schools and classes.
- (2) Personal visits to superintendents, principals, and teachers.
- (3) Special institutes and conferences of art teachers and supervisors.
- (4) Special meetings with normal-school instructors.
- (5) Lectures and talks to teachers and to pupils.
- (6) Public addresses.
- (7) Correspondence.
- (8) Literature in the form of syllabuses and outlines.
- (9) Traveling exhibits.

In New York a system of "Regents examinations" brings to the office of the State specialist in drawing thousands of secondary-school drawings twice each year, by which much of the work is judged. As occasion demands (about once every five years) State syllabuses are prepared for elementary and secondary schools, which outline the work in an extensive though general way. All examinations are based upon these outlines, and thus the work is standardized throughout the State.

From time to time leaflets discussing special phases of the work in general are issued by the State, serving in some measure to educate the poorer-trained teachers of the smaller communities. In addition the drawing director prepares special syllabuses on the art and design of vocational courses authorized by the State. Furthermore, he has all phases of industrial art work under his supervision, and examines all candidates for special teaching in drawing.

In Massachusetts annual reports to the board of education have served to place before the public such features of the work as the director deemed most helpful from year to year.

In Pennsylvania an "expert in drawing" has been appointed only within the last two years. Consequently, but little more than a start has been made. The expert issues general plans and outlines and prepares State examinations for special drawing teachers and supervisors.

In Minnesota the direction of work relative to public schools is confined to the "State Art Society of Minnesota."¹ Through public speaking and traveling exhibits and literature of various kinds, the director has done much to stimulate school art and industrial work.

¹ Maurice I. Flagg, director.

(b) City supervisors.—Practically all of the larger cities employ a director or a supervisor of drawing. In a number of cases all the manual work and drawing is supervised under one head, while in others separate directors for each phase of the subject are employed. In the first instance the position calls for a man and one having had training in the technic and methods of both art and manual lines. Most other drawing positions engage women teachers. Only in the largest cities are men directors found employed, mainly because of the salary question. In a few instances there are two directors of equal rank, one supervising the secondary and the other supervising the elementary schools. In some smaller cities having but one high school, the supervisor directs the work of the grades. Cities of the size of Boston, Worcester, Springfield, New York, Rochester, Buffalo, Cleveland, Columbus, St. Louis, Indianapolis, Minneapolis, Denver, San Francisco, Los Angeles, etc., employ from one to two or more assistants, besides special high-school teachers.

The duties of the supervisor are largely administrative. He does little actual teaching. This fact has led to much discussion among educators. Walter Smith firmly opposed from the beginning the teaching of grade drawing by the specialist. He considered it a part of the regular teachers' work which should only be directed and outlined by the supervisor. A difference of opinion still continues. While some maintain that the supervisor, with his special training, is best fitted to teach this perplexing subject, others contend that as the grade teacher knows her pupils best, she should teach all subjects, including drawing. The fact that her normal-school training has included this subject and that the supervisor supplements this training by monthly meetings adds weight to this argument. As a matter of fact the general tendency is to turn most of the actual teaching in the classroom over to the class teacher and compel the supervisor to actually supervise.

Careful supervision includes the planning of the work for each lesson throughout the year and the actual presentation of model lessons to groups of teachers representing certain grades. The director makes out a complete list of supplies; visits and confers with classes, teachers, principals, and parents; attends special meetings, where he explains a month's work in advance; keeps various records, gathers material for exhibits, and creates a general atmosphere of art and beauty throughout the schools.

The supervisor of Newark, N. J.,¹ adds:

It is the province of the supervisor to discover sham in the teaching, feebleness in knowledge of subject matter, incongruity in the practical interpretation of art study; to foster ideals of fitness, dignity, and real refinement; to recognize a seed of good in the ideas of others, however crude in form, and to help to nurture the seed

¹ Miss Eva Struble, supervisor.

until it becomes a strong plant. Our method has included frankness and honesty in constructive criticism, model teaching, semiannual lecture meetings, local exhibits, and office instruction. Effort has been for the most part to kindle enthusiasm and regard for truth, for knowledge, and for beauty.

In cities employing assistant directors the supervisor carefully superintends their duties and holds weekly meetings for a general discussion of the condition of the work. The assistants give model lessons and generally supervise their allotted districts. Visits are made so that each class is inspected usually once in one or two months. In Worcester, Mass., "Visits are made at intervals of six weeks in grammar grades and at intervals of seven weeks in all others."¹

The responsibility for the development of beauty in the lives of the thousands of public-school children through their grade teacher is great, and is not only a privilege of the supervisor, but a glorious opportunity. That the special directors of this subject recognize their responsibility is shown by the following extract:

Anyone who wishes to reach quickly the largest number of people in a community turns immediately to the public schools, and in that direction lies our opportunity. It is a mighty one and a great responsibility. Sometimes a feeling of helplessness comes over me when I think, What impression can one person hope to make upon a thousand teachers? And the next day when I see the immediate effect of a message sent out in a bulletin I tremble before the great possibilities and realize what might happen to the train of thought if I should open the switch in the wrong direction. And on how many experimental trips we do send these grade teachers. They follow our direction so willingly, and then we call them back and start them on another track.²

(c) *High-school teachers*.—Special high-school teachers may or may not be under a supervisor, and in the small places they may even supervise the grades themselves. Their duties are confined exclusively to the classroom and consist of direct teaching of the subject.

(d) *Grade teachers*.—Grade teachers, as a rule, have their lessons carefully planned and thought out by their supervisor, and do most of the actual teaching. The quality of work depends largely on the teaching ability of the instructor and her grasp of the subject. Assuming that she is, first, a teacher, her grasp of the subject matter is dependent upon her attendance at the supervisors' meetings and her ability to read plans. The idea prevails that natural talent and peculiar training are essential to success. This is a false belief, for drawing should be, and is, in fact, rapidly being treated on a par with all other subjects. Says Mr. Sargent:

Special talent is a factor to be reckoned with in elementary drawing on the same basis as in elementary language or mathematics.³

¹ Edward H. Thornhill, supervisor.

² Paper on "Applied design," by Miss M. Emma Roberts, supervisor of drawing, Minneapolis.

³ Fine and Industrial Arts in Elementary Schools, Walter Sargent.

Some schools are fitted with special drawing rooms or studios, in which case the upper grades are taught by a special instructor. This is true in Springfield, Mass.

All of the drawing in the first seven grades is taught by the room teacher. All of the eighth and ninth grade drawing is taught by special teachers in studios.¹

Methods of presenting the work must necessarily vary with each teacher and with each class. The general procedure should, however, be based upon the careful development of the child. Such development has, through the study of pedagogy and psychology, come to be recognized as the foundation for all teaching, drawing not excluded; and, as in other studies, the subject of drawing is peculiarly fitted to bring out certain special attributes. The better drawing outlines are therefore arranged to unfold these qualities.

The course of study in drawing for the schools of Syracuse, N. Y.,² says:

Each lesson should be presented in the same psychological manner as the other subjects taught, developing in the child his powers of observation, memory, reasoning, and judgment, and should be completed by practical application of the problem.

And in the course of study for San Francisco³ one reads:

Method in teaching should be based upon (a) a knowledge of the subject, (b) proper conditions, (c) scientific pedagogy.

The actual presentation of the subject depends to a great extent upon the phase of work in hand. Nature or object drawing requires a very different procedure from illustration. The first is representation through direct observation; the second is representation through imagination. The following, written by Edward H. Thornhill,⁴ in which both topics are combined, shows, nevertheless, how different each must be when presented separately:

Our method of teaching illustrative drawing may prove interesting. A subject is selected for one week, often two. For one week the first lesson is a free interpretation by the children. No graphic help is given by the teacher, the subject being explained orally and sometimes dramatized. Lessons 2 and 3 are devoted to improving the symbols necessary to the illustration, as single-object drawings, and lesson 4 to improved arrangement of these symbols in a completed picture. Much graphic help is given by the teacher in lessons 2, 3, and 4. When the subject occupies two weeks, a similar method is employed.

As a general methods suggestion the outline for Denver, Colo.,⁵ gives the following:

Require the entire attention of pupils when teaching. Have their hands empty. Lead them, by the exertion of their own powers, to master each new subject. Re-

¹ C. Edward Newell, supervisor.

² Miss M. Matilda Miett, supervisor.

³ Miss Katherine M. Ball, supervisor.

⁴ Supervisor of drawing, Worcester, Mass.

⁵ Charles M. Carter, director.

member that pupils acquire true conceptions of what is to be done before expression * * *. First, draw after judgment; second, test by judgment; third, test by mechanical means.

Class instruction necessarily prevails in graded schools; hence the demand for the complete attention of the class. When the teacher feels "all eyes upon her," that she is talking to everyone in the room, the following instructions are given in the San Francisco outline:¹

(a) The instruction should consist of a clear and definite, but concise, explanation of the exercise and its purpose, taken step by step sequentially, and illustrated by finished drawings, either on the blackboard or on paper.

(b) All principles pertaining to the subject matter involved should be discussed.

(c) All principles of technic involved in the exercise should be explained and illustrated on the blackboard.

(d) The pupils should be directed to work carefully, thoroughly, and expeditiously. The teacher should carefully hold them to a concentrated effort to accomplish the task in hand, always timing them for each part of the exercise. Otherwise they will lag and consume time unnecessarily which should be more profitably spent.

In high schools classes are usually smaller than in the grades; and with longer periods, plus greater powers of concentration upon the part of the pupils, the instructor, having had special training in this particular field, may give more individual assistance. Part of the introduction to the New York City² freehand drawing syllabus for high schools points clearly to the better methods of presenting the academic work:

The development of taste is not less important than the acquisition of skill in expression. Attention is therefore to be directed toward making these studies in art closely relate to the lives and interests of the students. The subject of design is important in this connection, and should be developed through problems drawn from attractive topics or "centers" appropriate to the school, as dress; the home; the printing office (in commercial schools); the workshop (in manual training schools).

In the discussion of these problems the pupils should be made to see that art is not merely a subject to be studied in the studio or museum, but that it exists in good form or bad in all their surroundings, and that they must continually display their taste in the commonest affairs of life.

With each problem there should be a discussion of the practical questions of color and design which it suggests and which must be decided daily by everyone. This teaching should be simple, direct, and nontechnical, the subject being shown to the pupils as something the laws of which should govern when they clothe themselves, hang a picture on a wall, set a table, deck a shop window, or print a commercial circular.

The development of each problem should be supplemented by illustrative matter prepared in the form of charts, and by much graphic illustration by the teacher. The pupils will thus be called upon not only to create beauty in their own productions, but to appraise it and to appreciate it in the work of skillful artists and craftsmen. Taste is to be developed by a continued effort to choose between forms fine and less fine.

¹ Miss Katherine M. Ball, supervisor.

² Dr. James Parton Haney, director.

In the technical treatment of the subject, emphasis is to be placed upon skillful and workmanlike technic. The problems should be limited in number, and each should be accompanied by practice plates, that the pupils may secure sufficient control of the media to finish the required sheets with elegance and precision. Each should be led to take pride in the completion of a set of exercises, clean and appropriately lettered, for submission for credit at the completion of the course.

In the representative work the pupils should be led to learn the principles of good construction and of good perspective, and to apply these in the criticism of their own drawings. Practice sheets or plates should precede finished drawings, and throughout the course exercises should be given in quick sketching and in memory work, to the end that each pupil may have sufficient knowledge of familiar forms and simple groups to enable him to draw these, even in the absence of the models, correctly constructed, foreshortened, well placed and arranged upon the paper. Constructive excellence and a simple technic is therefore to take precedence over elaborate compositions or water-color sketches.

The drawing room itself should be made a helpful adjunct to the teaching done in it. Its cleanliness, system, and order should be an example, and there should be frequent exhibitions of good class work and of reproductions of the work of skilled artists.

As a means of presenting the lesson the teacher uses the black-board, charts, drawing books, and various mechanical devices for perspective, color, etc. An admirable scheme which some teachers use is large manila paper, the work being accomplished in exactly the same manner as by the children, but on a much larger scale. On such a surface the pencil, crayon, or water color may be handled as in ordinary use.

As a direct help to the class teacher, outlines are provided by the supervisor. Such outlines range from mimeographed single sheets issued once a week to 100-page pamphlets elaborately designed and profusely illustrated. They cover the field of drawing and hand work for each month throughout the year. For elementary grades all subject-matter is generally grouped and adapted to the various seasons of the year, the nature drawing coming in the fall and the spring and the object drawing coming in the winter with the construction or handwork. Many grade outlines are then subdivided with the work centering about the various holidays, occupational interests, home duties, means of locomotion and transportation, and various school subjects.

A number of examples of typical outlines designed for rural schools, elementary grades, and high schools follow. In most instances a portion only of the detailed weekly plan is given. However, a number of the outlines are complete and represent the more advanced courses of the present day.

RURAL SCHOOL COURSES AND OUTLINES.**MASSACHUSETTS.****A Suggested Course of Study in the Practical Arts and Drawing, Designed for the First Six Grades of Rural Schools.¹****INTRODUCTION.**

The education and training of many country children end with the rural-school course, and for this reason their training should be such as to dignify and enrich life, give joy and satisfaction in the chosen occupation, whether it be in the country or city, and bring about through their instrumentality better social conditions. A knowledge of the practical arts and some ability to use drawing freely and spontaneously, as well as the appreciation of the best things in practical and æsthetic lines, are invaluable. Let the children learn the meaning of industry through actual experience in developing some school project; let them gain a knowledge of materials, their source, their preparation, their relation to industry, and the processes necessary in carrying to completion different projects; let them be brought into direct contact with life and social conditions in the schoolroom, and so gain a helpful experience and a sense of responsibility; let them find themselves through these varied experiences in the lower grades, and so be helped as they grow older, not only to find a life occupation for which they are fitted, but to have an appreciative understanding of the world of industry; let them gain a perception of proportion, direction, and form through accurate delineation, a keener appreciation of the fine arts through their own attempts to interpret in drawing, color, and design, a love of the beautiful in form and color, and a greater love of nature through direct contact; and, finally, let them develop the desire to care for themselves and help their fellows.

Three suggestive outlines are offered. These are planned to aid the teacher in the rural schools in teaching the practical arts, and drawing or the fine arts; and also to show how, with a single topic as a center, various projects may be developed, what material should be used and how the work may be adapted to a single class, or to cooperative work in several grades. This scheme is planned not necessarily to be followed, but to suggest to the teacher how any occupation or industry may be developed.

Following these outlines is a list of projects which have been successfully worked out in some of the public schools of the State. From this list may be selected those projects best suited to the diverse conditions found in rural schools. The teacher is expected to discriminate and to select from this great number the projects best adapted to the needs of her pupils and through which they will gain in experience and in efficiency. The teacher will frequently find that better results are obtained by working with the pupils in a few grades and selecting work adapted to these groups. A specified time is generally planned for each lesson, but it is realized that often much more can be accomplished by using two or more periods for one lesson, and later omitting the art period; or, again, by taking most of the work in drawing, nature, color, etc., in the spring and fall, thus leaving more time for consecutive lessons in the practical arts in the winter months. The teacher should nevertheless see that each study has its time allotment.

MATERIALS AND EQUIPMENT FROM WHICH A SELECTION MAY BE MADE.**Household Arts.**

A "packing-box equipment" for cooking may be secured at from \$1.50 to \$4 for each pupil. For such a purpose a large packing box, or two or three smaller ones may be procured, and shelves and hooks put in by the boys of the higher grades. If a box can not be had, a cabinet with shelves may be constructed. When the

¹ Prepared by Charles F. Whitney, Salem State Normal School; Mabel B. Soper, Bridgewater State Normal; Frederick W. Reid, Framingham State Normal; with the cooperation of other teachers of practical arts and drawing in the normal schools of Massachusetts.

above-mentioned equipment can not be obtained, the following cooking equipment may be secured at any town or village store:

For a class of 12, working in 4 groups.

1 large oil stove, or
4 small stoves.
4 asbestos mats.
4 mixing bowls.
12 stone baking cups.
12 cups and saucers.
12 plates.
4 pie plates.
4 measuring cups.
1 flour sifter.
1 large egg beater.
4 tumbler egg beaters.
1 wire whip.
12 case knives.
12 forks.
4 paring knives.
4 small saucepans.
12 tablespoons.
12 teaspoons.
4 wooden spoons.
1 large covered stewpan.
1 frying pan.
2 baking bowls, 1 pint.
2 baking bowls, 1 quart.
4 baking tins.
1 sugar bowl.
1 can opener.

12 small bowls or sauce dishes.
1 potato masher.
12 pattie pans.
2 graters.
4 strainers.
4 match boxes made in the school.
4 soap dishes.
4 salt shakers.
4 pepper shakers.
1 large pitcher.
4 small pitchers.
4 double boilers.
1 teakettle.
1 soap shaker.
4 rolling pins.
4 molding boards made by the boys.
4 vegetable brushes.
1 scrubbing brush.
1 cake tin.
1 drainer.
1 dishpan.
1 tank for hot water.
Glass jars with covers for spices and other supplies.
Dishcloths, wipers, and sink cloths may be made from salt, flour, and sugar sacks, or from crash, in the sewing class.

This equipment for 12 will cost about \$24.

Wash bench which may be made by the boys, washtubs, scrubbing boards, wringer, ironing boards made by the boys, irons, clothesline, clotheshorse, clothespins, soap, broom, mop, dustpan and brush.

Felt, raffia, reeds Nos. 2, 3, 6, 8, willow and cat-tail rushes, corn husks, wooden bases for baskets, splints, glue, jute, twine, yarn, spools, toy knitters, cardboard and wooden looms made by the older children, pins, needles.

Knitting cotton Nos. 4, 6, 8, large wooden needles. Such needles may be whittled and sandpapered by the boys.

Salt bags, flour and sugar sacks, grain bags—many of which will be furnished by the children. Checked gingham, cotton, linen, scrim, burlap, tape, braid, scissors, thimbles, needles, darning and tape needles, tape measure, sewing cotton, linen thread, floss and darning cotton.

Industrial Arts.

Clay, plasticine, slate, glass or enamel cloth.

Pressboard, strawboard, or bookbinders' board, construction paper, Indian craft paper, wrapping paper, cover papers, vellum, linen or crash, paste, glue and brush, knife, needles, linen thread and tape, bricks and boards for press. Good tools may be made from toothbrush or nailbrush handles by filing down the broken end to a rounded or chisel point.

Thin wood; salt-fish boxes, thin packing boxes, chalk boxes and cigar boxes are excellent for whittling. Native woods, planed pine boards and studding. If a bench is needed, one may be constructed by the older boys from heavy boards and studding.

Knife.
Hammer, 12-ounce, Maydole, bell-faced.
Mallet.
Nails.
Brads.
Try square, 6-inch, Stanley.
Chisel, $\frac{3}{4}$ and 1 inch short bit-socket firmer.
Brace, 8-inch.
Set of single-cut auger bits.
Set of nail bits.
Screw driver, 8-inch.

Countersink.
Backsaw.
Cut-off saw, 22-inch, 10 points.
Ripsaw, 24-inch, 8 points.
Jack plane, 14-inch, Stanley.
Block plane.
Compass, 6-inch.
Stains.
Sandpaper.
Oilstone, coarse India.

The Garden.

Procure such tools as the children are familiar with about the home.

Spade.	Trowel.	Flowerpots.
Rake.	Fork.	Watering pots.
Hoe.	Stakes.	Wheelbarrow.
Shovel.	Twine.	

Make window boxes and boxes for hotbeds. Secure old window sash and heavy boards for constructing hotbeds.

Drawing and Fine Arts.

Hard and soft lead pencils. Colored crayons, 6 colors, brown and black. Water-color boxes, 6 standard colors, black, No. 7 brush. Water cups, which may be brought from home. Rule, compass, scissors, drawing kits, dyes for stenciling. There is a great variety of dyes to be had. Good results are obtained by using common oil colors reduced with turpentine and put on very thinly with stiff brush. Stencil paper, cover papers, manila, white and gray drawing papers, paste made by the children, pictures for picture study.

BOOKS, MAGAZINES AND REFERENCE.

Excellent magazines, manuals, and books of instruction may be secured from publishers and school-supply houses. The construction papers, drawing papers, colors, and other materials are also furnished by school-supply houses.

Bulletins of the Massachusetts State Board of Education.
 School Arts Book, School Arts Publishing Co., Boston.
 Publications by Teachers College, Columbia University, N. Y.
 School and Society, John Dewey, University of Chicago.
 A Modern School, Paul H. Hanus, Macmillan.
 Working with the Hands, Booker T. Washington, Doubleday, Page & Co.
 Cooking for Beginners, Marion Harland.
 Elements of Theory and Practice of Cooking, Williams & Fisher.
 The Boston Cook Book, Fannie Merritt Farmer.
 School Needlework, Hapgood.
 Library of Work and Play, Doubleday, Page & Co.
 Occupations for Little Fingers, Sage and Cooley, Scribner.
 How to Make Baskets, Mary White, Doubleday, Page & Co.
 Farmers Bulletins, United States Department of Agriculture, Washington, D. C.
 Woodworking for Beginners, Wheeler, Putnam.
 Handwork in Wood, Noys.
 Woodworking for Amateur Craftsmen, Ira S. Griffith.
 Popular Mechanics.
 Popular Electricity.
 Printing Copies, The Fanning Printing Co., Newton Upper Falls, Mass.
 Helpful suggestions and illustrations will be found in publications of Prang Co., Atkinson, Mentzer & Co.

OUTLINE NO. 1.

SCHOOL HOUSEKEEPING.

Introduction and Instructions.

The following outline is offered as a suggestion to the teacher of the rural school to assist her to make the school a home center for the pupils, and to help her to meet some of the difficult problems which confront her.

The projects are merely suggestive. The teacher may substitute others, which she may select from the general outline or from her own experience, in order that she may obtain the following results:

1. A clean, orderly, well-arranged, and attractive schoolroom, with material and appliances in the places designed for them.
2. "Occupation" or "busy work" for younger and older pupils.
3. An orderly and properly served luncheon for the children who remain through the noon hour.
4. Properly cared for and arranged school work and papers.

Some of the work is planned to be done by the class as a whole, some by groups of children, some by individuals.

A portion of the work listed under "Household arts" and "Industrial arts," and all of that under "Gardening" is to be carried out throughout the year by groups of children or by individuals, requiring no class instruction except assignment of work and general direction.

It is proposed that for this purpose five minutes be given each morning after the school is assembled and before the opening exercises, twenty minutes or more at the noon hour to those children who remain for luncheon, and five minutes at the end of school; also, as "busy work" to individuals during the school session. Helpful suggestions for carrying out this plan may be gained by reading "The Montessori Method," Frederick A. Stokes, publisher, chapter on "Exercises in Practical Life," pp. 122, 123; also pp. 243-267.

A description of the projects suggested in the outline is appended. The articles made may become the property of the individual children at the end of the school year.

PRACTICAL ARTS.

Household arts.—Assign different occupations to different children for one week; change the assignments each week; encourage competition in efficiency:

1. Care of the schoolroom; such as cleaning blackboards, sweeping, dusting, arranging materials on shelves, filing school work, preparing materials for the day's use, caring for desks.

2. Orderly arrangement and serving of the school luncheon on a doily on pupil's desk, or, if possible, at a well-laid large table for all children; clearing of luncheon; care of food, dishes, and doilies. Make cocoa, sandwiches, soup. Prepare rice or cereal. Do laundry work connected with the luncheons.

3. Make towels, napkins, doilies, napkin rings, dusters, duster bags, woven mats, flowerpot and bottle covers.

Gardening.—1. Care for pots or boxes of flowering plants, each child to be responsible for one box or pot. Place pots on shelves or desk on braided raffia mats, and cover pots with baskets made of reed, rush, or raffia knotted or woven.

2. Raise bulbs in water in bottles or jars. Cover jars with raffia knotted covers to hang in window.

3. Care for seeds in pots and boxes. Plants raised to be transplanted into the ground at home or at school.

4. Care of vegetable-producing plants. These may be substituted for the flowering plants.

Select from General Gardening or Practical Science outline plants best to cultivate. Have each one of the older children record in notebook progress and peculiarity of each plant grown.

Industrial arts.—Some of the work in the industrial arts may be prepared by the older, and completed by the younger, children. The older children may make by themselves patterns and looms from clearly drawn and explained drawings on the blackboard; the younger children may use these patterns to draw around and cut out, and return to older pupils to complete the article. The younger children may use these looms to weave upon.

Projects in Paper and Cardboard.

Envelopes or covers for drawings or school papers.
 Envelopes for seeds.
 Boxes for materials used in arithmetic work.
 Boxes for pencils and penholders.
 Blotter pads for desks.
 Notebook covers.
 Cover and repair books and maps.

Work in Wood.

For older boys, while girls are sewing or cooking.
 Shelves or cabinets for holding materials.
 Boxes for shoes, rubbers, or other purposes, such as seeds or waste.
 Simple repairing about the schoolroom.

DRAWING OR FINE ARTS.

All drawings not used for definite purposes should be filed, and labeled with the pupil's name and date. At the end of the term or year these should be arranged and made up into books. This may be done by mounting each drawing on paper of uniform size, or by allowing an inch margin at left of each drawing, and sewing or pasting together at that side.

Pictorial Drawing.

1. *Nature—Fall.*

Younger children.—Draw in crayon or in water color simple grasses, twigs, berries.
Older children.—Draw in pencil, crayon, or water color the life history of one plant at different seasons of the year, or several studies of one plant in different positions. Draw in notebook when needed to illustrate text.

2. *Object.—Winter and spring.*

Younger children.—Select two or more stories called for in General Reading outline. Draw objects suggested by the stories. Draw from the object, from pictures, and by filling in forms made by drawing around patterns furnished by the older children. Draw these objects from memory.

Older children.—Select some subject of general interest connected with literature or history, such as colonial life, the Japanese, etc., and draw objects suggested by such study. Draw from the object, from pictures, and from memory. Draw and cut out forms for the younger children to use, such as trees, animals, common objects. Draw objects in notebook when needed to illustrate text.

3. *Illustrative.—Winter and spring.*

Younger children.—Use drawings made from objects, etc., and assemble in a built-up picture, which may be used as a decorative frieze around the schoolroom; the background, or setting for the same, to be drawn by the older children and the teacher.

Build up individual pictures in the same way (as "busy work," using the same method as built-up words with letters).

Draw story illustrations from memory.

Older children.—Study and draw pictures settings from pictures and nature. Assist the younger children to build up story pictures.

Illustrate notebook or other school papers with simple picture designs.

Picture Study.

Study pictures illustrating stories called for in General Reading outline. Use for this when possible reproductions of pictures by famous artists.

Industrial Drawing and Design.

1. *Industrial drawing.*

Younger children.—Draw lines with ruler and to measure.

Draw around patterns for projects in practical arts.

Draw patterns to measure when possible.

Draw simple geometric figures.

Older children.—Draw plans and elevations for the projects in practical arts.

Make patterns of same for younger children.

Learn to read working drawings.

Make illustrations, diagrams, maps, etc., for work in arithmetic, history, geography.

Print a good Roman alphabet to use in labeling school work.

2. *Design (when needed).*

Younger children.—Design stripe pattern to apply to weaving.

Frame nature drawing (decorative arrangement) to mount and apply to booklet, cover of drawings, or to calendars, etc.

Older children.—Design simple line and area patterns to apply to envelope for drawings or to booklets.

Design and print titles and labels.

3. *Color (throughout the year).*

Younger children.—Match colors.

. Paint circles or squares to form scales to illustrate: (1) Standards; (2) light and dark; (3) hues.

Older children.—Match colors. Paint scales to illustrate use of complements: 7 degrees of light and dark; 5 degrees of bright and dull.

Apply color knowledge and practice to all subjects where color is required.

DESCRIPTION OF PROJECTS.

Recipes.

Cocoa.

Order of lesson: Natural history; preparation for market; chemical composition (roasted); value as food; preparation for table.

For 6 cups of cocoa use 2 tablespoons of the powder, 2 to 3 tablespoons of sugar, 1 pint scalded milk, 1 pint boiling water.

Mix cocoa and sugar in a saucepan, stir in water gradually and boil five minutes; add milk and cook five minutes longer, or until smooth and free from any raw taste. Beat well with a Dover egg beater to prevent albuminous skin from forming.

Individual recipe.—One teaspoon powdered cocoa, 1 teaspoon sugar, $\frac{1}{2}$ cup boiling water, $\frac{1}{2}$ cup scalded milk, Follow above directions.

Boiled rice.

One cup rice, 1 teaspoon salt, 2 quarts water.

Put water to boil in a kettle. Pick over and wash rice in several waters. When the water boils rapidly, drop in the rice slowly, in order not to stop the boiling. If the grains settle to the bottom, stir them gently with a fork. Boil rapidly, uncovered, from 20 to 30 minutes, or until the grains can be crushed between thumb and finger. Add salt when nearly done. Turn into a strainer to drain, rinse with hot water, and dry in the serving dish in the oven (with door open) for a few minutes. Each grain should be white, soft, and distinct, the motion of the water keeping them separate, and the washing and rinsing removing loose starch that would tend to stick them together.

Cream of pea soup.

One can peas, 1 quart boiling water, 1 pint milk, 1 teaspoon salt, $\frac{1}{2}$ teaspoon pepper, $\frac{1}{2}$ to 1 teaspoon sugar (more for old peas than for young), 2 tablespoons butter, 2 tablespoons flour, 1 small onion.

Let the onion, peas, and water simmer for about 20 minutes, or until soft. When peas are very soft, mash onion and peas through a strainer; add the scalded milk. Rub the flour and butter together, stir into them a little of the soup, and turn this mixture back into the soup. Stir till smooth, add seasoning and sugar, and serve with croutons.

Sandwiches.

Discuss kinds of bread for making good sandwiches.

Discuss kinds of fillings for sandwiches.

Make sandwiches.

Lettuce sandwiches.

Cut end slice from bread. Spread each slice with creamed butter before cutting. Remove crusts, put slices together in pairs, and cut in squares, oblongs, or triangles. Put crisp lettuce leaves between these slices; 1 teaspoon mayonnaise dressing on each leaf may be added.

Egg sandwiches.

Spread bread as in lettuce sandwiches. Use hard cooked eggs. Chop white very fine, press yolks through a strainer. Mix yolks and whites, and season with salt and pepper; mix with cream salad dressing, and spread between slices of bread.

Paste for all lines of school work.

Two cupfuls of flour and 2 cupfuls of cold water mixed thoroughly. Boil, adding gradually 3 to 5 cupfuls of boiling water, stirring constantly. When smooth and thick add 2 teaspoonfuls of powdered alum and 1 of oil of cloves. Pour into small tumblers or jars with covers.

Sewing Projects.*Dusters.*

Materials: Blue and white checked gingham; blue or white silkateen; basting thread; needles; thimble; scissors.

Make square of material according to width of cloth. Turn half-inch hem and baste. Sew down hem by running stitch, using the checks as guides for length and evenness of stitches.

N. B.—Cheesecloth may be used, in which a thread should be drawn as a guide for the sewing.

Bags.

Materials: Same gingham as duster, or Russia crash may be substituted; silkateen.

Sew up sides of bags with backstitch and overcast seam. Turn down hem at top and sew. Draw up with braided cord made of double strands of silkateen. A simple stencil design may be applied to the bags when made of crash.

Dollies.

Materials: White crash or linen; blue or red silkateen; size suitable for desk top.

Turn 1-inch hem all around. Sew with outline stitch. Draw initial letter of school in corner. Outline.

Instead of the above finish the hem may be hemstitched in heavy linen thread or colored silkateen by the older girls.

If a large table is used, plan a cover of suitable size; or a simple linen scarf.

Raffia and Reed Projects.

Napkin ring.

Materials: Celluloid or tag paper of desired length and width; raffia; large tapestry needle.

Cut a strip of celluloid or strong tag paper 6 inches or 7 inches long and $1\frac{1}{2}$ inches or 2 inches wide. Cut half across the strip 1 inch from each end, and on opposite sides. Interlock the ends, forming a ring. Paste or sew firmly. Fasten a piece of raffia when pasting, then wind or buttonhole stitch all around. Fasten the end firmly. A second type of ring may be made by weaving in and out around the ring with raffia of another color. Still another is made by making two rings $\frac{1}{2}$ inch or $\frac{3}{4}$ inch wide and catching these together with any fancy stitch.

Woven mats.

Materials: Strawboard or box cover; string or warp thread; raffia.

1. *Round mat.*—Make circular cardboard loom of the desired size, using circle maker or compass. Divide into thirds, and each of these sections into either thirds or fifths, according to the size of the mat desired. At these divisions notch the outside edge of loom. Sew a loop through the center of cardboard, or fasten a small brass ring. Tie to this the string and carry across the loom through a notch, back through the next notch and through the ring. Continue around the loom, fastening the end firmly. Beginning at the center, weave with raffia, using simple over and under weave. Remove by breaking the outer edge of loom.

2. *Oblong or square mat.*—Same as above, making loom an oblong or square and stringing raffia across. Weave with raffia strands over and under—a new strand for each weaving thread, making a fringe across sides. Tie fringe to prevent raveling.

Flowerpot covers or baskets.

How to make Baskets, by Mary White, Doubleday, Page & Co., Publishers.

The Modern Priscilla, Publication on Basketry.

As a detailed description of these projects would be too long for the present publication, the above books may be used for necessary instruction in the subject.

Netted covers for bottles or jars.

The common square knot or the Solomon's knot may be used for these projects.

Tie the strands of raffia to a small brass ring which forms center of bottom of the cover. Knot the raffia in rows around the bottle or jar. When covered, braid the ends of raffia into loops. Run braided raffia cord through these for a hanger.

Paper and Cardboard Projects.

For this work use "Paper and Cardboard Construction," by George F. Buxton and Fred L. Curran, published by the Menomonie Press, Menomonie, Wis.; also "Teachers' College," syllabus of "Course in Elementary Bookbinding and Bookmaking," by Sarah J. Freeman, A. B., published by Teachers College, Columbia University, N. Y.

All projects suggested fully described, with drawings, in these books.

Woodworking Projects.

For this work see "Handicraft for Handy Boys," by A. Neely Hall, published by Lothrop, Lee & Shepard Co., and "Boy Craftsman," by same author and publisher.

The projects suggested may be made from grocery boxes, packing boxes, etc. If a bench equipment is furnished, other projects can be worked out, such as coat hangers, book racks, pen trays, letter racks.

OUTLINE NO 2.

The topics selected for the practical arts, and for drawing or the fine arts, may be in a great degree dictated by the environment, the local requirements, and the occupations or industries of the vicinity. These may be farming, dairying, market gardening, lumbering, fishing, manufacturing of some type, or the village store; and from any of these centers may grow a great variety of projects, which, though varying in character, are a unit in interest and value.

The children in the school are to be the producers and consumers of a great variety of products. The work in the school must give them insight into useful service on the farm, in the shop or office, or in the home. It must give them a practical experience, and help them to become intelligent, discriminating, happy, and efficient citizens.

The topic selected for this outline is the garden, and the projects recommended are developed from this center. Some are valuable to the school as a whole, some deal with work for the girls, others with work for the boys, and still others are for individual use. The work is not arranged by grades, but the teacher will find projects adapted to both younger and older children; others where cooperation is invaluable; projects in which the younger pupils may assist the older; and, again, where the older children may prepare work for and teach the younger. It is hoped that a careful selection from these projects will develop in the children a school spirit, a type of citizenship, a skill of hand and eye, and give a fund of general information which will prove of value in their present work, and form a background for future development. As previously stated, this is an outline not necessarily to be followed, but to serve as suggestive for any topic selected.

THE SCHOOL OR HOME GARDEN.

September and October.

For details in garden work, materials and tools required in all grades throughout the year, consult "Agricultural Projects for Elementary Schools," a bulletin of the Massachusetts State Board of Education. Copies may be procured on application. See also catalogue of projects in practical arts; and in "Farmers' Bulletin," United States Department of Agriculture, Washington, D. C. Consult Practical Science and Geography outlines.

Practical arts.

Household arts.—Prepare, cook, and serve products of the school garden. These may serve as part of the noon lunches. Make sandwiches; make salads, jellies and marmalade; can fruits and vegetables.

From washed grain bagging or burlap cut the shapes desired, and sew into bags for vegetables and bulbs.

Make knotted raffia coverings for bottles or tumblers to hold slips or other nature specimens.

Industrial arts.—Make cardboard envelopes or boxes for seeds. Make wooden boxes for packing fruits and vegetables. Do necessary repairing about the garden.

Drawing or fine arts.

Color.—In the study of drawing or the fine arts connected with the garden, let the work be governed by the cycle of the year. In the fall months study the colors found in the garden; review spectrum, standard, tone, scale, hue and other color terms; paint scales of the colors found in flowers and fruits, or paint color families; study simple harmonies of color.

Pictorial drawing.—Collect and arrange flowers and sprays from the garden. Draw from these specimens. Draw from seed pods, grasses, flowers, leaves, sprays, fruits and trees, using pencil outline, colored crayon, or water colors.

Industrial drawing.—Measure and draw patterns for labels, envelopes, and boxes for seeds; portfolios for nature drawings; books for records and accounts; working drawings for packing boxes. These are to be constructed in the work in practical arts.

Picture study.—The Gleaners, Millet; Return to the Farm, Troyon; The Haymakers, Adam.

Collect and mount pictures suggestive of the garden to use in booklets or as illustrative of language work.

November and December.

Practical arts.

Household arts.—Continue the work in preparing, cooking, and serving the products of the garden. Make soups, cook vegetables. Make pumpkin pies for Thanksgiving. Make paste for bookbinding problems.

Industrial arts.—Model from clay or plasticine the fruits and vegetables from the garden.

Construct labels, tags, cases, or books for drawings, reports, records, and clippings relating to the garden.

Drawing or fine arts.

Color.—Relate the color study to the drawing of vegetables. Work out color harmonies to be applied in design for projects in practical arts.

Pictorial drawing.—Make sketches of single objects and groups. Let the groups suggest garden occupations, and include the box or basket used in gathering the fruits or vegetables. Draw from sprays of evergreens with cones. Freehand paper cutting of fruits, vegetables, and garden occupations.

Design.—Make units of design from the flower or vegetable sketches made in September and October, these designs to be applied to projects in the practical arts. Cut and mount nature drawings; plan arrangement upon the sheet, space divisions and proper margins. These may be made into books in the practical arts work as records of the garden projects.

January and February.

Practical arts.

Household arts.—Continue the study of vegetables, fruits, and nuts; prepare, cook, and serve, in connection with the noon lunches. From washed grain bagging or burlap cut and sew mats for covering hotbeds.

Industrial arts.—Make wooden labels, sticks, trellises, seed flats, dibbers, seed cases, tool frames, for use in the spring garden work.

Drawing or fine arts.

Color.—Continue the study of harmony in color, working out a color scheme for a flower garden.

Pictorial drawing.—Draw trees in skeleton, studying growth and branching; use brush and ink. Make quick sketches of objects to be constructed in the practical arts. Make memory drawings of familiar objects.

Industrial drawing.—Make quick working drawings, full size or to scale, of objects to be constructed from wood: seed cases, tool frames, boxes. Draw a plan of the school grounds; locate walks and building, and draw to scale plans for flower and vegetable gardens. Consult arithmetic and practical arts outlines. Draw alphabets, numbers and titles for use on books, labels, portfolios, and working drawings.

March and April.

Practical arts.

Household arts.—Make soups from peas, beans, potatoes. Cook potatoes in various ways. Bake beans or peas for noon lunches.

Industrial arts.—Make gathering baskets, with or without handles. Weave melon baskets for use in the flower garden. Repair fences, trellises, and walks. Make hot-beds from heavy boards and old window sash. Make plant sticks, labels, and trellises.

Drawing or fine arts.

Color.—Continue the color study, relating it to the planning of the garden, nature work, and work in design.

Pictorial drawing.—Draw from early spring flowers. Draw from twigs from the garden, studying them in various stages of development. For object drawing use garden tools, flower pots, watering pots, and wheelbarrow. Make quick illustrative sketches and careful drawings. Study foreshortening of circular faces.

Picture study.—Cattle Plowing, Bonheur; The Shepherdess, Le Rolle; Going to Labor, Troyon; The Sower, Millet.

Collect and mount pictures relating to spring.

May and June.

Practical arts.

Household arts.—Prepare and serve radishes, dandelions, and other greens, carrots, lettuce, peas, or other early products, as part of the noon lunches. Make salads and salad dressings.

Industrial arts.—Model birds, nests, and eggs. Continue weaving of the gathering baskets. Make bird house.

Drawing or fine arts.

Color.—Review fall color study. Work out harmonies to be applied to projects in practical arts.

Pictorial drawing.—Draw from seedlings. Make careful detail study of several stages of growth, showing the life history. Draw from birds, nests, butterflies. Sketch trees in mass.

Design.—Plan designs for nature book covers, using nature units of design—flowers, leaves, or butterflies. The books are to contain the drawings and written work connected with the garden study, and are to be bound in the work in practical arts. Free-hand paper cutting of garden occupations.

Picture study.—The Lake, Corot; The Ford, Corot; The Willows, Corot.

NOTE.—Arrange for an occasional parents' day or a school festival. Decorate the room with the garden products, exhibit school work, plan appropriate exercises, and make programs.

OUTLINE NO. 3.

AN OUTLINE FOR PRACTICAL ARTS AND DRAWING, BASED ON SEASONS, FESTIVALS, AND HOLIDAYS.

Project 1.—Seed Box for the Harvest.

Method of construction.—Younger children should use construction paper 8 by 8 inches. Fold this into 16 2-inch squares. Cut on outside 2-inch folds of two opposite sides, leaving the bottom of the box four squares in size. Fold up the sides, making the box one square in depth. Paste together, making two opposite ends of double thickness. For the cover, cut paper 8½ by 8½ inches. Proceed as above. Notch the center of two opposite sides so that the box may be pulled out readily. See recipe for paste in school housekeeping outline.

Project 2.—Wooden Gathering Box for the Harvest or Waste Box for the Garden.

Materials needed.—The box to be 2 feet deep and 1 foot 3 inches square will require North Carolina pine sheathing ¾ inch thick, two brass or iron handles, 3 dozen 1½-inch

round-headed screws, 3 dozen $1\frac{1}{4}$ -inch brads, hammer, crosscut saw, rip saw, plane, screw driver, and miter box.

Method of construction.—Cut enough boards 2 feet $\frac{7}{8}$ inch long for the sides. Make first the two sides, to which the handles are to be attached, making them 1 foot $4\frac{1}{2}$ inches wide, allowing for tongue and groove, which must be cut off the exposed corners.

With rip saw split board 5 feet 6 inches long in the middle. Plane groove and tongue from the strips. Cut into 1 foot 3 inch lengths and miter ends. Of these eight pieces make two frames. Nail sheathing to frames, placing one frame $\frac{7}{8}$ inch from ends of boards, the other flush with ends. Make bottom of box 1 foot 3 inches square and fit into end where $\frac{7}{8}$ inch was left. Screw bottom in, screw sides together, and attach handles. Stain with appropriate color.

NOTE.—A good stain may be made by using dry colors and thinning with turpentine and a little linseed oil. Rub on with rags or cotton waste. Immediate rubbing after applying the stain will lighten the tone. If a finish is required, rub with floor wax. Ten cents' worth of dry color will make a large quantity of stain. Suitable projects for the girls will be found in other outlines.

Project 3.—Menu Cards for Hallowe'en.

Method of construction.—Collect and study menu cards. Discuss size and proportions. Make the cards of the desired size, from white cardboard or construction paper. Decorate with pumpkin, jack-o'-lantern, or other units appropriate to the day. These cards may be used as place cards, with appropriate quotations printed by the children.

Project 4.—Thanksgiving Candy Box.

Method of construction.—Make this a measurement lesson. Construct from heavy, colored construction paper. Decide upon the best size; for example, the box is to be 5 inches long, 3 inches wide, and $1\frac{1}{2}$ inches deep. Cut sheets of paper 8 by 6 inches. Fold in $1\frac{1}{2}$ inches on all four sides. Cut $1\frac{1}{2}$ -inch folds on the long sides. Paste $1\frac{1}{2}$ -inch squares to $1\frac{1}{2}$ by 3 inch oblongs, forming the ends of the box. Draw similar pattern for the cover, making the top $5\frac{1}{2}$ by $3\frac{1}{2}$ inches, and allowing $\frac{1}{2}$ inch or 1 inch for the depth. Fold and paste as in the box. A simple geometric design may be applied to the cover. Use colored crayons or water colors.

Project 5.—Christmas-Tree Decorations—Cornucopia.

Method of construction.—Cut construction paper 5 inches, 6 inches, or 8 inches square. Fold upon one diagonal. Fold two adjacent edges of the square to meet this diagonal. These two edges may be laced, forming a square cornucopia, or the two smallest faces may be overlapped and pasted, forming a triangular cornucopia. Before lacing or pasting, the upper corner of the cornucopia may be folded, and a simple bisymmetrical unit may be cut. Hang with raffia or worsted.

Project 6.—Christmas-Tree Decorations—Hanging Basket.

Method of construction.—Fold a 6-inch or 8-inch square of construction paper upon its diameters. Fold the corners to the center, forming a smaller square. Turn the corners back to the edges of this smaller square. Cut one diameter of the original square to the center, then from the end of this same diameter cut off one triangle. Fold and paste so as to form a triangular basket. Tie the corners with raffia or worsted, leaving ends to be tied above, as a hanger. In connection with the Christmas projects, wind festoons, hangings, and wreaths for schoolroom decoration.

Project 7.—Log House for Lincoln's or Washington's Birthday.

Method of construction.—Collect twigs for building the house. Use plasticine or putty to hold the twigs together. Use raffia, hay, or straw for a thatched roof. This problem should be definitely planned and drawn upon paper, with dimensions marked. Let the children cut the sticks the desired lengths for the sides, ends, and the walls between the windows and doors. Notch the sticks where overlapping at the corners of the building. Fill the cracks with plasticine or putty. Make a ridge pole, fastening it to the gables with strong pins. Arrange the thatch, allowing it to hang over the eaves. Doors and shutters may be made of heavy cardboard or thin wood. These buildings may be arranged in the sand table with appropriate surroundings. They will also be found useful in the object drawing by the older children.

Project 8.—Valentines and Envelopes.

Method of construction.—A box valentine of any size may be made by the same method as the seed box (Project 1), using appropriate valentine decorations.

Still another box may be made as above, cutting the corners of the box down $\frac{1}{2}$ inch. These laps are folded out at right angles, and a heart of sufficient size to cover the top of the box is pasted to them. From the center of this heart is cut a smaller concentric heart, which swings back upon its pasteboard hinge, forming the cover.

Make valentines from paper, folded once, or folded like a three or four wing screen, and decorated.

Make envelopes from patterns obtained from any common envelope, altering the measurements to suit the present need.

Project 9.—Tree Booklet for Arbor Day.

Method of construction.—Use heavy cardboard or bookbinder's board of suitable size for covers. Cut one strip of vellum or curtain canvas 2 inches longer than the covers and 1 inch wider than the necessary binding. Paste cardboard to vellum, leaving a space between the covers sufficient to hold the necessary pages. Turn in the remaining 1 inch of vellum at either end and paste. Cut a second strip of vellum, equally wide and 1 inch shorter; to this sew the pages to be bound. Cut cover paper, allowing 1 inch to turn in at top, bottom, and front edges of the cover. Cut triangular pieces from the outer corners of the cover paper, and when pasting endeavor to butt edges. Paste the piece of vellum to which the pages have been sewed as a lining to the first piece of vellum. Cut the lining paper for the covers $\frac{1}{2}$ inch smaller than the cardboard, and paste the lining overlapping the vellum. Decorate the cover with tree units of a darker tone than the paper, printing the title carefully. The book may be used for notes on tree study, sketches of trees, for mounting leaves, for photographs of trees, or for program of Arbor Day exercises.

Project 10.—Program for Parents' Day.

Method of construction.—Fold medium weight construction paper for cover, with the inside program $\frac{1}{2}$ inch smaller. Design simple border, which may be drawn 1 inch in from the edges of the cover; or plan simple unit for cover design. Print carefully, well placed, the words "Parents' Day," and the date. Print program and insert, sewing the pages to the cover.

DRAWING OR FINE ARTS.

Projects 1-2.—The Harvest.

Nature work.—Draw in silhouette seed pods or fall flowers. Follow with pencil sketches, showing proportion, growth, joints, and important details. Sketch the main lines lightly, to suggest spacing and growth before painting or drawing. Draw later

in colored crayon or water color. Draw sprays with fruit or sketch vegetables, using similar method.

Color.—Teach color in connection with the nature work, and through this develop standards, light and dark tones, hues, and harmonies.

Project 3.—Halloween.

Nature drawing and design.—Draw from the pumpkin, singly or in groups. Use pencil outline and accent drawing. Later, draw in crayon or water color. Fold small squares of paper and cut pumpkin or other suggestive units of design. Apply to the practical arts projects in borders, head or tail pieces, or single units.

Project 4.—Thanksgiving.

Paper cutting.—Free-hand paper cutting of Thanksgiving incidents. Illustrative sketching or memory drawing for Thanksgiving.

Design.—Cut from squares, circles, or triangles modified units for decoration of the constructed candy box.

Object drawing.—Draw from familiar objects used on the Thanksgiving table. Use single objects or simple groups.

Projects 5-6.—Christmas.

Nature drawing.—Draw in colored crayons from sprays of holly or other evergreens.

Design.—Fold small square or oblong papers and cut holly or Christmas tree units of design to be applied to cornucopia, hanging baskets, or Christmas cards.

Object drawing.—Make illustrative sketches of Christmas stories. Make object drawings from toys and Christmas gifts brought by children. The younger children will draw in silhouette or outline in profile, but the older children should study the objects carefully, introducing foreshortening.

Project 7.—Lincoln's or Washington's Birthday.

Object drawing.—Having constructed the log house as suggested in the Practical Arts outline, let the children draw from the constructed object. The younger children will draw from a front or side view, while the older children attempt other positions.

Illustrative sketching.—Illustrative sketches in colored crayon may be made to use with written stories.

Project 8.—Valentine's Day.

Illustrative sketching.—The children make drawings illustrating sending valentines. This may include the drawing of fences, walls, gateways, doorways, and action drawing of figures.

Object drawing.—Letter box.

Design.—Units from flowers, hearts, the carrier pigeon, etc. Apply to valentines and boxes constructed in the practical arts, using simple color harmonies.

Project 9.—Arbor Day.

Nature drawing.—Draw from trees in skeleton; later, in mass. Make lists of trees found in the vicinity and illustrate.

Design.—Cut tree units to be applied to tree booklet for Arbor Day. Cut from acorn, cone, fruit, and nut units for the same purpose. Study lettering of simple type, to be applied to covers and title pages.

Project 10.—Parents' Day.

Apply design, coloring, and lettering to programs, as in previous projects. Collect and arrange flowers, evergreens, or ferns for schoolroom decoration. Plan and letter class or school banners or shield.

CATALOGUE OR LIST OF PROJECTS.

PRACTICAL ARTS.

Younger Children.

Household arts.—The younger children should assist in many simple ways in the cooking, serving, sewing, and weaving, while the older children do the actual work. Much will be learned through observation. Some may be able to make cocoa, toast bread, and cook eggs. They may help in collecting and measuring materials for cooking; wash and wipe dishes; care for the table; assist older children in the care of the foods; wind balls of worsted or jute; sweep and dust the room; care for erasers and blackboards; care for teacher's desk and books.

They may plan a division of labor in caring for a doll's house; set the table; arrange the furniture, make the beds, etc.

Make knotted cords, braided cords, jump ropes, reins, twine ball holders, hammocks, table mats, rugs, napkin rings, baskets, holders, broom cases, sewing sets and bags, blotters, handkerchief cases, slipper bags, sponge bags, broom bags, washcloths, towels, mats for flower pots and vases of flowers. Make doll's outfit. Crochet mats, reins, drawing strings for bags.

NOTE.—The objects mentioned include knotting, braiding, winding, simple over and under weaving, running stitch, over and over stitch, hemming, and darning. The materials found useful are twine, jute, worsted, floss, wicking, raffia, cotton cloth, linen, coarse canvas, crash, checked gingham, felt, and burlap. The projects involve the use of toy knitters, cardboard or wooden looms, thimbles, needles, thread, pins, and scissors.

There is ample opportunity, even in the simplest weaving or stitches, to apply simple borders or units of design. Threads may be drawn, and colored raffia or jute darned in their place as borders.

The teacher should call the attention of the children to the sources of materials which enter into the cooking, sewing, and weaving; she should relate the work to home geography, with instructions upon staples which enter into much of the work in practical arts. The arithmetic should also be closely related to these projects.

Industrial arts.—Model conventional objects; balls, fruits, vegetables, trees, birds, animals, people, toys, vase forms, tiles, bowls, bridges, walls, and gateways. Model objects, either singly or in combination, to illustrate any school work.

NOTE.—The modeling of simple objects is generally done without the use of tools, upon a slate, board, glass, or piece of enamel cloth. The materials are clay or plasticine.

Useful objects made from thin cardboard or construction papers; circle makers, tags, tickets, bookmarks, book covers, booklets to contain nature drawings, folders, envelopes, magazine covers, portfolios, pencil boxes, looms, sewing sets, including needle book, scissors case, and pin case; work boxes or baskets, calendars, checker boards, toys, toy furniture; circus tents, animal cages and wagons for circus; buildings illustrative of history, peoples, their industries and occupations, such as the Japanese, the Indian, the Eskimo, and the Arab; lumbering, fishing, storekeeping. Objects made from sixteen square or oblong foundation; furniture carts, boxes, baskets, cups, boats; houses, barns, chicken coops, windmills, and other buildings.

In addition to the above the children may build houses, barns, bridges, towers, castles, pyramids, and other objects from blocks sawed by the pupils in the higher grades, or from bricks made of cement or plaster.

NOTE.—Many of the objects mentioned above may be used in the home or the school; in connection with other studies, for the recognition of holidays or festivals, and in the sand table, as illustrative of peoples, their customs, occupations, and industries. The materials necessary are thin and heavy cardboard, construction paper, Indian craft paper or tag board, paste (which may be made by the children in the higher grades, see recipe in School Housekeeping outline), scissors, wooden toothpicks, rulers, pencils, colored crayons, wooden blocks. The object may be made by folding from given patterns or by measuring.

School or home garden.—The work in gardening should be based definitely upon the project method. Full directions for such work are published in Bulletin No. 1 of the Massachusetts State Board of Education. These will be furnished on application.

The following lists are not necessarily to be followed literally, and do not prevent the growing of additional crops when so desired, or the growing of crops listed in the lower grades, by pupils of the higher grades as additional projects.

Projects: Grow at least three of these crops; radishes, lettuce, sweet peas, carrots, beets, potatoes.

Older Children.

Household arts.—See work for younger children. Let the children become familiar with the relation between cereals, vegetables, and fruits. Study the corn or some other garden product; how it is used in the green stage; when ripe, where and how it is milled. Study the foods in their relation to the human body. Discover what the mothers of the children are cooking, what the children can cook, what materials they can best procure. Have them cook cereals, make soups, make sandwiches, study the care and preparation of vegetables, make salads, make simple desserts, plan and serve lunches. The children should care for cooking equipment, clean silver, and do the laundry work connected with lunches and cooking lessons.

The following projects are recommended:

In the fall term, cook vegetables; can tomatoes and other vegetables, pears and other fruits; make jellies, marmalade, and preserves; make pickles; make apple sauce, and bake apples.

In the winter term, study the baking of breads; make toast, white bread, baking-powder biscuits, corn bread, muffins; make pies, cake, apple cake, gingerbread, fritters, griddlecakes; study stews, chowders, dried legume and vegetable soups; study starchy foods for puddings; rice, bread, and steamed puddings; tapioca and macaroni; make candies for Christmas and other holidays; make chocolate or cocoa.

In the spring term, study proteid cooking; care of milk; make butter, cheese, junket pudding, and cook eggs; study salad making, using the early vegetables—lettuce, radishes, greens, and cress; make ice creams; cook and serve cooperative lunches of foods furnished by the children. Let one child bring milk, another eggs, another butter, another vegetables, or other foods.

Weave reed or raffia mats for flowerpots or table use; reed workbaskets, flower baskets, or wastebaskets. Net school bags, insect nets and hammocks. Crochet or knit table mats, reins, trimmings, scarfs, socks, and caps.

Keep clothing in repair. Make sheets, pillowcases, sash curtains, bureau scarfs, cushions, face cloths, soap bags, shoe bags, sponge bags, traveling cases. Study care of bedroom and bedding; airing and cleaning. Make articles for the dining room—napkins, doilies, tablecloths. Care of table linen. Make caps and aprons for work in cooking.

Dye fabrics for bureau scarfs, sash curtains, and doilies, using materials collected in the garden or vicinity.

NOTE.—These projects involve weaving, netting, crocheting and knitting, basting, stitching, half-back stitching, hemming, running, overcasting, overbanding, gathering, hemstitching, and buttonhole making. The materials necessary will be found in the preceding list of "materials and equipment."

Industrial arts.—Useful objects made from construction papers, cardboard, vellum, and wood: Portfolios, stationery cases, letter files, cardcases, clipping cases, desk equipment, boxes for spools, seeds, pencils, and other apparatus, books and book covers, using pamphlet vellum, Japanese bindings. Repair maps.

Make plant sticks and labels, crochet and knitting needles from wooden skewers; select and assemble die cut parts of toys and other objects; mount and put together. Make key racks, fishline winders, boats, carts, wheelbarrows, weather vanes, bean-bag boards, ring toss, other games and toys; bird houses, handles for insect nets, boxes

for vegetables, window boxes, window screens, weather strips, mop and broom racks, tool racks, shelves for closets, packing case or box, with shelves for cooking equipment. Saw building blocks for younger children; saw and plane boards to cover desks for cooking tables.

Make general repairs, such as putting up clothes hooks, shelves, brackets, moldings, sandpapering, scraping, painting, varnishing; repairing fences, walks, trellises; shingling; care of tools, sharpening and cleaning tools and knives.

NOTE.—These projects involve measuring, cutting, folding, pasting, sewing, and simple processes in woodworking. The materials necessary are listed under "materials and equipment."

School or home garden.—See suggestions of work for younger children.

Projects: Grow at least three of these crops—Cucumber, spinach, corn, tomatoes, Swiss chard, alfalfa, kohlrabi.

DRAWING OF THE FINE ARTS.

Younger Children.

Pictorial drawing. 1. Nature.—Draw from simple grasses and sedges. Draw around leaves, match the colors. Study twigs, the branching, growth, etc. Draw from wild and cultivated flowers; fruits and vegetables in outline, mass, and color. Figures expressing action; birds and animals.

2. Object.—Draw from garden implements, toys, and familiar or interesting objects. Objects suggested by the seasons, holidays, gifts, occupations, etc. Frequent memory sketches in pencil or color.

3. Illustrative.—Illustrative sketches of stories, peoples, incidents, holidays, folk lore, games, occupations; free-hand paper cutting for similar purposes; mount cuttings. Build up pictures from cuttings by children.

Industrial drawing and design.—Draw lines, angles, and simple geometric figures upon blackboard and upon paper. Free-hand cutting of similar figures. Rule lines and figures. Measure and rule 1 inch, 1 foot, 1 yard, $\frac{1}{2}$ inch, $\frac{1}{2}$ foot, $\frac{1}{2}$ yard. (See Arithmetic and Practical Arts outlines.) Draw around given patterns, or make original patterns of any objects to be constructed in practical arts. Make patterns for labels, tags, banners, or shields. Use circle maker. Print alphabets.

Copy arrangements or original units of design, using lines, plants, butterflies, animals, and modified geometric figures. Use these designs when needed on invitation cards, portfolios, Christmas cards, menu cards, bags, etc.

Color.—The spectrum. Recognition and naming of standard colors. Use the prism. Scales of light and dark. Match colors found in nature study. Use colored crayon or water colors in painting scales and in nature work and design.

Picture study.—Feeding her Birds, First Steps, Millet; Children of the Shell, Murillo; Select animal pictures, Landseer or Rosa Bonheur; A Primary School in Brittany, Geoffrey; Spring, The Ford, Corot; Historic pictures, Broughton.

NOTE.—See Practical Arts outline for projects involving nature drawing and object drawing. Relate the fine arts work to such projects. Use silhouette, pencil outline, water color, colored crayon for drawing and design. Even with the youngest children the teacher should aim to cultivate an appreciation of good spacing, mounting, and arrangement of drawing upon the sheet.

Older Children.

Pictorial drawing. 1. Nature.—See outline for younger children and projects in Practical Arts outline. Draw bulbs, vegetables, fruits. Make sketches of the life history of some plant. Study and illustrate seed dispersal. Draw foreshortened flowers, leaves, and sprays. Careful detail study of one subject—branching, joints, leaves, buds, flowers, fruit. Draw trees in mass and skeleton. Mount drawings with

suitable margins, or plan arrangement within a given space. Consult Garden and Practical Science outlines.

2. *Object*.—Draw single objects or very simple groups of two objects showing foreshortened circular and rectilinear faces, giving attention to composition, grouping, size, and proportion of objects and spaces. Let groups illustrate some topic—cooking, sewing, gardening, fishing, the druggist, means of lighting the home, etc.

3. *Illustrative*.—Illustrated booklet centered around a given topic—the garden, the workbench, the kitchen, the store, etc. Illustrative sketches for stories, history, literature, geography, arithmetic, industries, peoples. Make up pages of illustrations and text into booklets in the work in the practical arts. Continue study of landscape settings and elements for illustrative pictures.

Industrial drawing and design.—Continue work planned for the lower grades, the new measurement being $\frac{1}{2}$ inch, $\frac{1}{4}$ inch, $\frac{1}{8}$ inch. Simple geometric problems. Draw patterns for projects suggested in the Practical Arts outline. Draw two or more views, actual size or to scale, for other projects. Draw diagrams for flower or vegetable gardens. Plan school and home garden to scale.

Study order, balance, symmetry, rhythm. Modify squares, oblongs, or circles; cut these from folded paper and apply to penwipers, blotters, etc. Simple units and border designs for sewing, weaving, darning, and stenciling. Make frequent use of squared or ruled paper. Make designs from nature units to be used on the clipping cases, seed cases, book covers, portfolios, and blotters. Study lettering for marking linen, book covers, title pages, posters, labels, Christmas cards, etc. Free-hand lettering used for decorative purposes. Symbolic units for holidays and festivals. Cut stencils for use in practical arts.

Color.—Review color work of lower grades. Study hues, values, scales, color families, harmonies. Paint scales of complementary colors and neutrals. Plan color schemes for stenciling, darning, and other projects in practical arts. Plan color schemes for flower gardens. Apply color study to work in nature and design. Dye raffia or fabrics, using materials collected about the school building. Select colors for painting and tinting walls and woodwork of the schoolroom.

Picture study.—See picture study for younger children. Collect and mount pictures of historic value. Pictures of Egypt, Assyria, Greece, Rome, Christian and Moorish architecture, etc.; relate to work in history and geography. Select and mount pictures for schoolroom decoration.

NOTE.—In nature drawing use silhouette, pencil outline, colored crayon, or water color. Let the character of the subject dictate the medium to be used in representation. Give care and thought to arrangement upon the sheet, spacing, growth, movement, and detail in nature work; careful composition and representation in object drawing; good quality of line. Make large sketches upon the board, giving attention to size, shape, position.

In the industrial drawing use kits if they can be procured. Use hard pencil, and expect accurate measurements and careful drawing.

NEW YORK.

Drawing Leaflet—An outline to assist in the teaching of the elementary drawing syllabus.¹

Purpose of this leaflet.—This outline is expected to aid those teachers of drawing who have not had the advantage of special and technical training in the subject and who, because of the ordinary demands of other subjects upon their time, are unable to develop a working plan in a subject as special and technical as is that of drawing.

Outlines.—The following is the minimum requirement for the first four grades, so grouped because they are not subject to examination.

¹ Royal B. Farnum, State specialist in drawing and handwork.

*Outline for grades 1-4.*General subjects: *Illustration. Decoration.***1 Topics.***a* Illustration: Special days, occupations, games, stories.*b* Decoration: Christmas booklet, valentine, bookmark, Easter card, calendar, etc.**2 Mediums.***a* Pencil.*b* Colored crayon.*c* Chalk and blackboard.**3 Practice.***a* Single objects in flat (elevation).*b* Composition—grouping.*c* Given units for design motifs to be used with reference to space arrangement and application.**4 Pictures.**

Grade 1.

Madonna of the Chair. Raphael.

The Age of Innocence. Reynolds.

Children of the Shell. Murillo.

Feeding Her Birds. Millet.

The First Step. Millet.

Hiawatha. Norris.

Grade 2.

Return to the Farm. Troyon.

The Divine Shepherd. Murillo.

Mother and Child. Toulmouche.

The Drinking Trough. Dupré.

Interior of a Cottage. Israels.

Can't You Talk? Holmes.

Grade 3.

The Balloon. Dupré.

Potato Planting. Millet.

Penelope Boothby. Reynolds.

Little Samuel. Reynolds.

Shepherd and His Flock. Bonheur.

Caritas. Thayer.

Grade 4.

The Escaped Cow. Dupré.

Arrival of the Shepherds. Lerolle.

A Helping Hand. Renouf.

Sistine Madonna. Raphael.

(Madonna and Child—detail).

Pied Piper of Hamelin. Kaulbach.

Little Rose. Whistler.

5. Aim.*a* Facility of expression.*b* Good proportion.*c* Order in spacing and arrangement.*d* The ability to recognize in each grade six pictures and to tell who painted them.*Explanation.*—By the term "Illustration" is meant picture making as a means of expression, not formal representation.

By "Decoration" is meant the simple arrangement called for in such a problem as the booklet, requiring the spacing of a few letters and a decorative motif copied for the purpose. There need be no attempt at original designing.

*Outline for grades 5-6.*General subjects: *Representation. Design. Maps.*

1. *Topics.*
 - a Representation: Nature and object drawing.
 - b Design: Booklets, cards, calendars, mats, doilies, etc.
 - c Maps: Simple maps.
2. *Medium.*
 - a Pencil.
 - b Crayon.
 - c Blackboard.
3. *Practice.*
 - a Single objects in flat (elevation) and parallel perspective.
 - b Nature in mass, outline and suggested color.
 - c Original design motifs drawn on squared paper.
 - d Pencil maps.

4. *Pictures.*

Grade 5.

The Shepherdess. Lerolle.
 End of Day. Adan.
 Autumn. Mauve.
 Song of the Lark. Breton.
 The Gleaners. Millet.
 Oath of Knighthood. Abbey.

Grade 6.

Sir Galahad. Watts.
 The Sower. Millet.
 The Horse Fair. Bonheur.
 Puritans Watching for Relief Ships. Boughton.
 Reading from Homer. Alma-Tadema.
 Fog Warning. Homer.

5. *Aim.*

- a Truth in observation.
- b Continued facility in expression.
- c Simple original decoration with application.
- d The ability to recognize in each grade six pictures and to tell who painted them.

Explanation.—Drawing as a pure "Representation" begins in this simplified outline with the fifth grade and in object drawing proceeds only as far as parallel perspective. Here, too, "Decoration" becomes "Design" so far as the adaptation of a nature or geometric form on squared paper will allow.

Teachers should continually drill on the work of the previous grades which is easily correlated with the requirements for the fifth and sixth.

*Outline for grades 7-8.*General subjects: *Drawing. Design.*

1. *Topics.*
 - a Drawing: Representation of nature and objects, mechanical drawing, science drawing, map drawing.
 - b Design: School booklets, posters, etc., problems relating directly to the home—the home center.
2. *Mediums.*

All and any applicable to the work in hand,

3. *Practice.*

- a Objects in any position.
- b Drawing for all purposes—water color.
- c Design applied to school and home problems.

4. *Pictures.*

Grade 7.

Fighting Téméraire. Turner.
 Golden Stairs. Burne-Jones.
 Water Gate. Van Marcke.
 William I of Nassau. Van Dyke.
 In the Meadow. Lerolle.
 Shaw Memorial.. St. Gaudens.

Grade 8.

Water Carrier. Millet.
 Temperance. Burne-Jones.
 The Mill. Rembrandt.
 Madonna of the Shop. Dagnan-Bouveret.
 The Haymaker. Adan.
 Medfield Meadows. Inness.

5. *Aim.*

- a A knowledge of the various methods of expression by means of drawing.
- b A knowledge of the fundamental design principles with definite application to practical problems.

Explanation.—"Representation" gives way to "Drawing" in the seventh grade, for now the pupil should draw free-hand or by mechanical means, as the problem demands.

Design is but another means of drawing and centers about the home. At the end of the eighth grade, pupils should be able to understand the use of the pencil, crayon, and brush and such materials as are necessary for constructive problems adaptable in schoolrooms. A high grade of technical skill is not expected, but intelligent and efficient workers should be developed.

No limitation.—It should be distinctly understood that no teacher is limited to this outline either to the general subjects or to their place in the grade. It is to be expected that trained teachers will do much more. As already implied, this outline is intended to assist the teacher who needs help in interpreting the present syllabus. Color study, object drawing, perspective, handwork, and a host of other topics and problems may be and should be taught as at present under the able supervisor.

ELEMENTARY SCHOOL COURSES, OUTLINES, ETC.

NEW YORK STATE SYLLABUS.

General course with detailed outline for first and eighth years. (Illustrated.)

DRAWING AND ELEMENTARY HANDWORK.

The following syllabus is intended for helpful suggestion to the teacher and supervisor of the elementary grades. It is not a rigid outline to be strictly followed. It is the *child*—not the *course of study*—which should be taught.

"As the course of adult life is determined by environment, so a course of school work is determined by conditions of child life," and as these conditions vary in different localities, so will courses of study and methods of procedure change to suit the varying conditions, though the general phases of the work will remain the same.

As will be noted, the general lines of work are summed up under the following heads:

- Nature drawing and Color.
- Constructive drawing and Design.
- Pictorial drawing and Composition.
- Plant drawing and Decoration.

One line of the work should not be abruptly taken up to the exclusion of what has gone before, but there should be an orderly progression from one phase through another, appreciation and good taste being the ideal from the beginning.

In the well-rounded course, construction should be as forcibly emphasized as the free-hand drawing, for both sides of the art work are of equal importance in the development of the child; consequently in the more specific outline which follows the general course it will be noted that "Making" is given its place throughout the year.

Again, it is not expected that any teacher will attempt *all* that is given in this syllabus. Judgment and common sense should be used, and that work most suited to local conditions should be utilized.

School and home decorations are essential topics for consideration in the schools, and for this purpose picture study has been suggested for each year. Though the work in design should mean and include the study of decoration beyond the field of the schoolroom, yet a study of pictures hardly comes under the head. At the same time, pictures constitute an important and universal means of decoration, and we should all know which are good, and why, and become familiar with as many of the best works in painting, sculpture, and architecture as possible. In no other State is there so great an opportunity offered for advantageous work along this line as in New York. The division of visual instruction with its 300,000 lantern slides, 28,000 photographs, and 1,800 wall pictures ready for loaning throughout the State should be a great help in this important phase of education and should become a working asset for every teacher.

No time allowance is specified, as this differs in various parts of the State. Also conditions may not allow of an equal amount of work in different localities, though the same time be given to it. Therefore, one should gather from the following suggestions what will help most in the allotted time.

The teacher should not feel compelled to use *only* the drawing period for that subject nor that time for drawing alone. The school period spent in drawing plants and animals as a part of the nature study work may in reality be the best sort of a drawing lesson. Correlation has been emphasized throughout the syllabus. In brief, the drawing and manual training should be made of practical use throughout the child's school life, that it may assert its educational value as a common means of expression. It should be utilized as a help in other studies; observation in the nature and object drawing should lead to a keener mental attitude in language; the study of design should mean neatness and order in the written work; the making and construction work may be used in arithmetic; and again, the arithmetic should be used in constructive design, the nature study in nature drawing, and geography in illustrative drawing. In other words, the drawing should be made of vital importance to the child, for his mental, physical, and spiritual uplift.

The following general course, including all years, is immediately followed by a more detailed outline for each year:

FOR ALL YEARS.

Nature drawing and color—September and October.

These months are rich in nature material. Grasses, berries, and fruits are abundant. The sequence in plant drawing is as follows:

- (1) Movement of growth and direction, as expressed in line.
- (2) Branching, as expressed in angle and division of spaces.
- (3) Proportion of parts, as expressed in mass, or relative size of flowers and leaf and stem.
- (4) Massing of plants, as expressed in silhouette, accuracy in growth, and proportion within a given space.

- (5) Foreshortening of parts rendered in two values.
- (6) Appearance of the whole as rendered in values, with great care in observation.
- (7) Structure.
- (8) Textures.
- (9) Beauty.

Each child should be provided with a specimen, otherwise interest and effective drawing are weakened and half the value of the work is lost. As in the nature syllabus so in the drawing, "Nature study that is of educative value emphasizes the study of things first hand."

Constructive drawing and design—November, December, and January.

In the lower grades the constructive drawing is reduced to a minimum. In the intermediate grades it receives more attention and requires greater precision. In the upper grades it demands the utmost accuracy of which the pupils are capable. Constructive terms should be made familiar from the beginning through correct use.

The problems in design in the lower grades should be selected with an eye upon the interests of children. All constructive work should be of immediate practical value; work which will last at least a week without being propped up. There is a tendency toward the making of flimsy paper objects, which violate one of the first principles of constructive design—stability. As soon as possible the teacher should bring about the best production and appreciation of good design. The spirit of Thanksgiving and Christmas should inspire the work of these months. These days of giving and receiving should bring about a genuine motive for productive effort.

The work in drawing and design should be so closely allied to language as to be part and parcel of it. This is emphasized in the English syllabus. "The teacher should make the pupil's ideas, thought, and fund of facts more full and varied, and his knowledge more definite." Drawing with the language clarifies the knowledge.

Pictorial drawing and composition—February and March.

Pictorial drawing should begin in simple mass and outline and proceed along the line of the child's interest—playthings, objects of daily use, domesticated animals—to the representation of the peculiarities in form and position as presented by an object before them. Wherever the child needs to describe any objective thing accurately in words he would better draw it first. In half of the school work he should find his drawing pad his best ally. Younger children show no particular interest in perspective effects. Do not aim to focus the attention of the pupils upon the proportion, the relative widths and heights of objects before the third grade. After that the teacher should lead them to record the effects of distance and of foreshortening. After the fifth grade children must begin to develop accurate and skillful use of brush and pencil. Drawing should become as common a means of expression as language. Pictorial drawing should be more vital, more genuinely useful to the pupils and more evidently a necessity as part of the school work than we have commonly conceived it.

There are two birthdays of national heroes to be celebrated in February. Valentine Day has a place in the lives of the children. The aim of pictorial drawing in the primary grades should be to lead pupils to acquire facility in graphic expression. Subject matter should be determined largely by other school studies—language, history, and stories.

The subjects for illustrative sketching, which should be confined to the lower grades, should be those with which the children are familiar, such as occupations, games, or fables and stories well known to them. First they must be allowed to tell the story in their own way, then it must be guided expression, and finally an expression combining carefully selected elements. Gradually and firmly the teacher must see that their

representation is faithful to fact. The teacher should not deceive herself in believing that "free expression" is a good excuse for poorly executed work.

Suggestive topics are: Car ride; at the beach; the postman; the grocer; the hurdy-gurdy; a rainy day; a sport in winter; skating; the fire drill; a windstorm; the picnic; the parade; the station; breakfast time, etc.

The value in this work lies in developing the habitual use of the pencil as a simple, direct means of expression.

The picture study, which is suggested throughout each year, will be helpful in connection with picture drawing. The children should be lead, by simple questioning, to observe and record the results of their study by direct application to their own work in illustration.

In the early grades the meaning of the picture should be brought out. The action, the sentiment, the various physical conditions existing—as climate, time of year, appearance of persons (young or old), etc.—should be studied. In the upper grades it should be given more exhaustive study—simple composition, use of perspective, relation of values, center of interest, etc., as well as a careful observation for the spiritual meaning.

In place of picture study in the advanced years casts of objects and architectural features may be introduced. Pictures, however, are much easier to obtain. Pictures of casts give but a poor presentation of the actual objects and are not recommended. They were made either in the round or relief, and should be studied in their original form. Architectural ornament is quite readily studied through pictures, for it is not so important for its modeling as it is for its decorative qualities.

Plant drawing and decoration—April, May, and June.

Nature is awakening; buds are swelling; the song of birds is in the air; the months are rich with new life. Drawings should be in harmony with the season. The first catkins, the first spring flowers, and the return of the first birds are always of lively interest to children. Nature study and plant and bird life can be combined. Careful observation and analysis should be made of native forms and colors so that children may be led to enjoy the beauty of the springtime. The spring material varies according to locality. In the primary grades, Easter is sure to be the center of interest. Arbor Day and Memorial Day should be observed in May. In the early grades the work should follow the season and the calendar. In these grades there should be no formal course in representation and design. Small children can practice such elementary processes as are incident to decorative design, as the tinting of their paper by means of the flat wash, working to an outline, and the placing of one unit in reference to others. Beginning with the fourth grade the pupils should learn something of what constitutes a decorative design, a surface repeat, a border, a bilateral unit, and a rosette. These items may be taught in connection with the study of flowers, birds, and insects of the spring. The designer often goes to spring for his raw material and adapts this material to produce beautiful ornament. The three fundamental principles as given under the study of nature in that syllabus are "recognition," "adaptation," and "utilization." These three apply also in the study of nature and design under the drawing syllabus: Recognition of the flowers and their colors being the first step; conventionalization or the adaptation of the nature motive, the second; and utilization or the application of the design, the third. In the upper grades a simple study of historic ornament is of value in showing correct applications of nature's principles. Historic motives are constantly utilized about us, and a knowledge of these, though necessarily limited, gives the child a sense of participation and power.

FIRST YEAR.

September and October—Nature drawing and color.

Drawing.—Grasses, sedges, and the simpler fall flowers and fruits. Avoid complicated specimens. Use pencils, colored crayons, or water colors. Make direct fearless brush strokes, that familiarity and freedom may be gained. Give each child a specimen. City teachers may be able to gather specimens through park officials or by sending to some country school.

Color.—Begin to teach the color names—R, (O), Y, G, B, P. By means of a glass prism throw the colors upon the wall. Have pupils imitate the spectrum with colored pencils. Give special attention to the colors in the specimens drawn. Avoid those with too many colors.

Making.—Free cutting suggesting autumn festivities—Hallowe'en pumpkin, etc., cut and colored with crayon or water color. Work centering about the playhouse may also be started at this time—simple furniture, as chair, table, etc.

Correlation.—Tell the "rainbow story." The school exercises following the observations of nature's movements preparatory to winter and spring, will take the form of language work. Correlate the making with other school work.

Study.—The direction and character of growth. Make a pleasing arrangement of the specimen within an oblong. Taste can be developed by taking pains that the sheet is appropriate in size, or by judicious trimming. Strive for keen observation, for the clear mental image makes for the thoughtful representation. Study for vital correlation with all subjects pertaining to this grade.

Picture study.—"First Steps," Millet; "Interior of a Cottage," Israels; "Hiawatha," Norris.

November, December, and January—Constructive drawing and design.

Drawing.—Objects suggested by the harvest time and objects preparatory to Thanksgiving and Christmas festivities. Use colored papers, colored pencils, and water colors. Draw subjects suitable for work in making, as the illustrations used for Thanksgiving and Christmas cards, etc. Make sketches of the construction work, that each child may have more than one idea in regard to his problem.

Design.—Free-hand practice of straight and curved lines. Make simple borders for effect of repeat. Design simple ornament appropriate to work in construction. Make decorations for Christmas tree furnishings.

Making.—Thanksgiving and Christmas cards. Set up and furnish a Christmas tree, with decorations from colored paper. Suitable mountings of pictures relating to the topics of these months gathered from old magazines, advertising pamphlets, etc., and cut out. Free-hand cutting of toys of colored papers will not only interest the children but will give a good control of hand movement, which is one of the best forms of elementary manual training.

Correlation.—Connect the drawing with language work. The study of several different objects which may be related to tell a story is recommended. Pictures cut out and colored will furnish illustrations for written work. Correlate the making with our own history, the Pilgrims, etc., as free cutting of the landing of the Pilgrims, to illustrate the historical story.

Study.—The terms center, above, below, left, right. Straight and curved lines. Under this head study for precision and accuracy in workmanship. Aim high, but do not expect too much. Study for simple but good design used for constructive work, with use of simple terms, as unit, repeat, border, etc. Order and rhythm in design. One inch measure.

Picture study.—"Madonna of Chair," Raphael; "Mother and Child," Brush; "Holy Night," Correggio; "Village Choir," Lins.

February and March—Pictorial drawing and composition.

Drawing.—Illustrative sketches of Christmas and holiday experiences. Winter sports, games, fables, and nursery rhymes. Illustrate in any convenient medium. Keep to silhouette or flat effects, as no attempt should be made at perspective. Keep drawings simple, bold, and free as possible, for children are apt to work too intently on minor details. Make simple drawings of the construction work.

Making.—Illustrated calendar, bookmark, or some such piece of making in the flat. Free cutting for pictorial work to be correlated with other subjects. Symbols for Washington's and Lincoln's birthdays. Use simple modeling merely for free expression.

Correlation.—The children can describe, either oral or written, the things that they or some one else has drawn. Clearer observation and clearer expression should be the aim. Have the children discuss their illustrative stories. Let the teacher tell a story, or have the child tell a story, so that the conditions may be placed clearly before the children's minds. Then have them make the drawings. Connect also with geography, history, nature study. Model a mountain of clay or sand, make Indian canoes of paper or clay, model or draw a bird as it is described.

Study.—The stories which children illustrate in their drawings should bring out, to some degree, definite action, placing, form, and color. Strive for free imagination and definite expression. Sum up in this illustrative work all previous study in regard to nature, constructive and decorative drawing, as well as color.

Picture study.—"Children of the Shell," Murillo; "Angels' Heads," Reynolds; "A Piper and Pair of Nut Crackers," Landseer.

April, May, and June—Plant drawing and decoration.

Drawing.—Objects in colors appropriate to the season, using colored crayons or water colors. Draw also in silhouette, seeking movement and direction. Make and use simple nature units in simple design. Have the flowers drawn in color from the object, if possible.

Design.—Review the standard colors. Match colors found in nature and other sources. Teach that nature uses but little strong color with abundance of weaker colors. Design cover for garden booklet. Use printed title and the conventionalized drawing of a flower. Keep it simple but well spaced.

Making.—A flower garden booklet. Keep simple, and make but few leaves. Bind simply and use colored design on cover.

Correlation.—Simple poems and bits of prose description will furnish good reading and are sure to call up visions easily put into pictorial forms. The various observances of Arbor Day, Memorial Day, and Promotion Day become a correlating center. A poem written about a single flower may be used in connection with the flower booklet.

Study.—The work should be in harmony with the season. The coming of the first catkins; the coming out of the first flowers and the flying back of the first birds are topics of perennial delight to little children. Study characteristics of each as well as their time of coming. In design, study effects of regular spacing.

Picture study.—"Before the Storm," Dupré; "Age of Innocence," Reynolds; "Two Families," Gardner.

EIGHTH YEAR.

September and October—Nature drawing and color.

Drawing.—Fall flowers and fruits with idea of making records or plates for future uses. It is time now to insist upon greater accuracy in drawing, finer proportions and better details. Draw in pencil outline and light and shade.

Color.—Treat nature drawings in beautifully refined color qualities for satisfying effects and decorative purposes. Note predominance of grayed color in nature and effective use of strong color.

Making.—Sewing and cooking for girls. Manual training for boys, making of simple stools, bookcases, cabinets, tables, etc., after preliminary exercises and instruction on various constructive elements involved. Detailed drawing of objects to be made. Application of color to sewing materials.

Correlation.—Choose one phase of the work and trace its development in history. Correlate fall drawing with nature study. Botany.

Study.—Careful rendering of nature for botanical analysis. Beauty of color harmony, use of complementary colors, etc. Study differences in poster effects of color and interior decorative color.

Picture study.—"Holy Grail Series," Sargent; "The Water Carrier," Millet; "Westminster Abbey," London.

November, December, and January—Constructive drawing and design.

Drawing.—Various objects in different positions. Note the constructive features, as the joining of the handle on a teapot; the construction of the nozzle; joining of the neck of a can to the nose, etc. Make free-hand and mechanical drawings of the constructive problems. Draw them also in perspective. Make memory drawings of objects previously studied.

Design.—Make and apply designs to the problems in making. Competitive design of a cover for the annual school report. Do not feel obliged to always apply surface decoration, however, as good design in the construction is, more often than otherwise, all that is necessary.

Making.—Continue the sewing and cooking for girls, and woodworking for the boys.

Correlation.—Connect with other studies in a vital way. Children should by this time combine their drawing with other work quite freely and unconsciously. Keep the standard for illustrative work always high. Discourage the tendency toward poor drawing and writing in other lessons.

Study.—Memorize familiar objects and study their construction and characteristics with regard to the representation of them. Study for beauty and grace in line and mass and work carefully for beautiful results in the making.

Picture study.—"Madonna of the Shop," Dagnan-Bouveret; "Queen Louise," Richter; "Temperance," Burne-Jones.

February and March—Pictorial drawing and composition.

Drawing.—Make careful studies of still-life groups, working for pictorial or picture effect. Treat also in a decorative way, applying the study of good composition to both the decorative and representative picture. Draw in pencil light and shade, outline, charcoal. Treat in a decorative manner by rendering similar studies in flat washes of color with heavy outline. Compose simple landscapes in flat value and flat color.

Making.—Continue the manual-training work as first started, laying emphasis on the value of good workmanship. That school is indeed unfortunate that does not have some handicraft work which furnishes a motive for the application of drawing principles.

Correlation.—The landscape composition will illustrate the study of geography. The pictorial rendering may be utilized throughout all the other studies. Correlate cooking and physiology. Collect specimens of various woods and make records of them.

Study.—Effects of light and shade, shadows, perspective. Note the elements of good composition as seen and developed through picture study and apply to the drawing. Study effect of line in leading one into the picture; mass for a like reason, and good framing. In the manual-training work study Japanese embroideries for examples of good technic and good furniture for construction, use and care of the wood.

Picture study.—"The King of Rome," Greuze; "The Mill," Rembrandt; "Pot of Basil," Alexander.

April, May, and June—Plant drawing and decoration.

Drawing.—Represent accurately details of early growth. Draw the spring flowers in outline and color for botanical work, with special emphasis on details of construction. Draw in various positions and dissect the flowers for more careful study. Draw various parts for decorative units. Draw the spring birds and butterflies.

Design.—Treat spring drawing in a decorative way by conventionalizing the drawings and applying to work in making. Design cover for graduation program and school booklet.

Making.—Complete work in sewing and woodworking. Make graduation programs, to be judged, and the best used upon that occasion. Make portfolio or book of design and drawing work for other school subjects. Print carefully from alphabets previously learned.

Correlation.—Study of spring with physical geography and nature study. Write a paper on conventionalization for English; figure cost of work in making, as cloth, thread, needles, wood, nails, stain, etc., in arithmetic, or figure profits on machine-made articles, etc.

Study.—Practical results from drawing and making. Note development of various technics and possibilities of following it to a high grade of workmanship and art.

Picture study.—"The Haymaker," Adan; "David," Michel Angelo; "Medfield Meadows," Inness.

PENNSYLVANIA.

Course of Study in Drawing and Industrial Education.¹

DRAWING.

Until our school system provides a more thorough course in drawing, a special teacher or supervisor for the subject will be required. Smaller towns situated near each other should combine to hire a teacher of drawing. Sometimes three or four small towns can be well supervised by a good teacher.

Arrangements can be made through monthly teachers' meetings to have the drawing supervisor meet the teachers of the rural districts and instruct them in the work for the following month. The teachers should be expected to work out in this meeting the lessons which they will present to their pupils. In this way, they will meet the same difficulties which the pupils meet and the supervisor can help to solve them.

The work in drawing will make an especially strong appeal to the rural teacher, for all about her the fields and woods are teeming with materials to use. The country child should be taught to enjoy the beauty of the things about him. He is surrounded by beauty fresh from the hand of the Creator, while the city boy sees the creations of man.

Nature does not reveal herself to the careless observer; but to him who studies her sky and trees, fruits and flowers, "she speaks a various language."

Grade teachers, who are especially fond of the work, should be encouraged to specialize in drawing, since a good teacher usually makes a good supervisor. All teachers should feel the need of some training along this line. The tendency toward industrial education puts new demands upon the teacher, and no subject can be taught well without special preparation.

Summer schools offer courses in these subjects, and the wide-awake teacher will avail herself of the opportunities to prepare for this work.

¹ Rose M. Fetterolf, expert assistant in drawing.

MATERIALS.

Books should be used only as helps for the teachers. Teachers should be supplied with as many helps as possible. It is a good plan to furnish the grade teacher with two or three copies of her own grade book in order that she may cut out and mount the illustrations for use as good examples. She should also have the book for the grade above and also the grade below her, in order to know the sequence of the work.

Gray and cream manila paper are preferable to white for general use in public schools. White may be used for pencil work, if preferred. Sheets 9 by 12 inches should be used for all grades. This sheet can be carefully torn lengthwise or crosswise when a smaller sheet is desired. Children should learn to tear paper carefully.

Charcoal is an inexpensive material which may be used in all grades. It is good for large mass drawings in the primary grades and for smooth tone studies in the higher grades.

Colored crayons may be used in any grade but are especially adapted to lower grade work. If supplied for the lower grades, they might be borrowed for use in the higher grades.

If a special teacher of drawing is provided, water color can be begun in the intermediate grades. The three-color box with black added is a good box for grade work. Work in brush and ink or black water color can precede the color lessons until the handling of the brush is acquired.

Soft pencils should be used in the higher grades, beginning with the fifth or sixth grade.

Tinted papers will be found very pleasing for construction work.

Mounting cards for exhibition should be of a soft gray, tan, or ivy-green color.

It seems a good plan to have pupils construct large envelopes of manila paper in which to keep their drawings. The older pupils might make envelopes for the lower grades, since it is a good construction problem. If drawings are kept in order as to lessons, it will be easy to exhibit the work by lessons, by passing out envelopes and having each pupil hold up his sheets, one by one.

Each sheet should have the name of the child, his grade, and the number of sheet written plainly just above the center on the back of the sheet.

It is a good plan to have a good-sized poster board of olive green or tan burlap, on which several of the better drawings of the last lesson should always appear. This is a stimulus to good work.

THE LESSON.

All nature subjects should be large, and a sufficient number for every pupil to see one plainly is necessary. Boards should be placed across the aisles resting on opposite desks—two in every second aisle. Ordinarily six boards are sufficient. On these boards can be placed easels made of a large cardboard, with the bottom turned back, on which books can be placed to make it stand. The nature subject can be pinned to this easel. Vegetables or still life can be arranged on the boards.

Large, fresh specimens should always be supplied. All pupils in the room should draw. A child should have a second sheet of paper only by special permission from the teacher. He should be made to feel that his first sheet is to be his best work. Practice lessons are apt to be carelessly done and the vitality of the lesson is lost. Pupils should never be allowed to draw on both sides of the paper.

In presenting any lesson in drawing it is necessary to have some conversation about the subject to be drawn. If nature subjects—the name, growth, size, and placing, etc., are important. Help the child to look for these carefully before he begins to draw. In still life there is the grouping, the teaching of ellipses, the placing of one object back of another, etc. Do not be afraid to teach the child in the drawing class. You will not check his originality and you can arouse his interest. Help him to see things

as he draws. At the close of the lesson the drawings may be put up and criticisms made by the class. Helpful criticism rather than fault-finding is desired.

Color boxes should be cleaned after each lesson by removing superfluous color from the cakes with a moist brush. Every lesson should be one in neatness and accuracy. Each pupil should have a cloth when painting on which to clean his brush. The brush should be drawn across it lightly, otherwise the bristles will pull out. At the end of the lesson the brush should be dipped into the water several times and then shaken to bring it to a point. Brushes when used for lines should be held vertically—for washes obliquely.

In mounting for exhibitions the mounts should not be too crowded. It is hard to see quality on account of quantity, sometimes. Four to six drawings are usually enough for the average-sized mount. Drawings of the same kind should be kept together, viz, nature subjects, still-life objects, etc.

COURSE OF STUDY.

Grades 1, 2, and 3.

The lessons in these grades should be closely related to their subjects. The stories and poems given under the head of English should be illustrated. Good spelling lessons can frequently be taken from the drawing lesson, and the language lesson can be very closely related. If rightly taught, drawing will vitalize every other subject. Primary pupils should draw or paint in mass, since they are not able to produce a line with feeling. Their lines are apt to be hard and mechanical. Pencil outline should be reserved for the higher grades. The length of periods in the lower grades should be from 15 to 25 minutes and it is desirable that drawing be taught every day in these grades.

The work in drawing in the lower grades should be correlated with the industrial work. Indeed, it is so closely related that it is hard to separate it. The teacher should keep this in mind and have all designs made to use on some article, no matter how simple, which is constructed by the child.

September—October—November.

Teach terms: Top, bottom, center, right, left, side, back, front, corner. Creasing and tearing of paper. Teach the six standard colors. Combinations of green, orange, and violet. Paint a color scale. Paint a rainbow. Paint fall flowers and berries in color mass. Paint a simple fall landscape. Illustrate fall games or stories, told in the language lessons. Paint vegetables in mass with crayon or charcoal. Paint the pumpkin for Thanksgiving. Other Thanksgiving subjects, such as the turkey, Jack-o'-lantern, etc. Use these in decoration of a Thanksgiving booklet. Teach the placing of a unit or border. Illustrate Thanksgiving subjects: (a) Catching the turkey; (b) Thanksgiving dinner; (c) Pilgrims.

December—January—February.

Make and decorate Japanese lanterns. Paint lanterns. Paint the Christmas tree. Paint the Christmas stocking. Paint a reindeer. Make simple arrangements for borders by repetition of units. Apply these to the Christmas cards, calendars, booklets, candy boxes, etc. Paint winter landscape. Illustrate memory selections from the English course. Illustrate Christmas subjects: (a) Hanging the stockings; (b) bringing the Christmas tree; (c) Santa Claus coming; (d) Christmas morning. Paint toys in mass with crayons, engines, carts, cars, horns, drums, sled, ship, large animal toys, etc. Paint articles of clothing, caps, hats, mittens, rubbers, rubber boots, shoes, hand bags. Winter landscape, using white chalk for snow. Illustrate games: What I do with my toys. Winter sports: Coasting, skating, making a snow man, making a snow fort. Make and decorate valentines. Make and decorate booklets for Lincoln's and Washington's birthday. These can be made for stories or poems used in language or reading lessons. Simple lettering should be a part of the decoration of a booklet cover. Covers may be made for booklets of trees, flowers, or landscapes. Study Indian design. If possible, draw from a cat or dog. Give exercises in judging lengths

of lines by having the pupils draw free-hand lines of a certain length and afterwards measuring to test them.

March—April—May.

Easter subjects. Paint Easter eggs. Paint rabbit from the animal, if possible. Paint little chicks. Illustrate Easter subjects. Illustrate Easter poems and stories. Paint spring landscape. Illustrate what the wind does. Paint an umbrella on a rainy day; child may pose with an open umbrella. Illustrate spring games and occupations: (a) Playing marbles; (b) base ball; (c) rolling hoops; (d) jumping rope; (e) making garden; (f) planting flowers.

Illustrate: (a) The circus; (b) subjects suggested by spring poems. Paint a watering can. Paint budded twigs: (a) Pussy willow; (b) horse chestnut; (c) lilac. Paint spring flowers. Paint robins and bluebirds. A good effect can be gotten by painting in white chalk, and then painting other colors into it.

Grades 4, 5, and 6.

The length of periods in these grades should be about 35 minutes. Three lessons a week should be given.

September—October—November.

If a good supervisor is provided, water color may be introduced into these grades, otherwise it will be much better to use ink or black water color.

Crayons may be borrowed from the lower grades for color studies.

Paint fall flowers, berries, and seed pods. These may be done in mass with crayons, brush, and ink or black water color.

Make color schemes from autumn leaves, berries, and flowers, to be used later.

Draw leaves in different positions in brush or pencil outline. Draw different proportioned rectangles and place sprays of flowers, berries, or seed pods within, making pleasing compositions.

Paint fruit on the branch, apple, grapes, quince, etc.

Place these in an inclosing frame in tones of gray or color.

Paint vegetables with and without foliage.

Draw the same in accented pencil outline.

Motives may be found by cutting through seed pods, flowers, etc. These may be used singly or in borders for decorating cover for booklets.

A tree book, a flower book, or a seed book may be made.

December—January—February.

Designs may be made to decorate articles planned for Christmas work in the manual-training course.

The holly branches, Christmas tree, bells, etc., furnish motives for the designs.

Simple lettering should be taught and used as a part of the decoration for the booklet.

Squared paper will be found helpful in teaching both lettering and design.

Paint Japanese lanterns.

Draw the lanterns in accented pencil outline.

Study dress fabrics and select good ones as to color and design. Paint a plaid. Paint a rug.

Teach sphere, cube, cylinder, hemisphere, square, prism, and right angled triangular prism, and the shapes of the circle, square, oblong, semi-circle, and triangle.

Draw in light pencil outline and accent, objects based on these type forms: Vegetables, kitchen articles, books, baskets, etc.

Simple groups of these may be studied in the higher intermediate grades. They may also be arranged for composition in line or flat tones.

Study landscape with bare trees. Paint winter landscape at sunset.

Make good booklet covers in which to put compositions about Lincoln and Washington. Make valentines.

March—April—May.

Paint from animals if possible, in mass with brush. Draw from the pose in mass. Study complementary colors. Paint the birds as they arrive in the spring. These may be painted with brush and with colored crayons. Paint a spring landscape. Draw and paint from budded twigs.

Grades 7 and 8.

The period should be about 40 or 45 minutes long, two periods each week.

September—October—November.

Make large accented pencil outline studies of leaves in different positions. Make large studies of fall growths. Make compositions from these studies and paint in flat tones of color. Study color schemes in connection with this work. Fall leaves and butterflies are good materials for color schemes. Make large pencil outline sketches of groups of vegetables. Place groups within frame lines for composition. Make a Thanksgiving booklet cover.

December—January—February.

Make a good border design and apply it to some useful article. Make a Christmas calendar using a suitable decoration. Study lettering carefully. Make a written or printed page, studying spacing. Try to apply this to essays and all written work. Perspective. Draw cylindrical objects studying the ellipse above and below the eye and on the eye level. Draw cubical and rectangular objects, studying receding edges, vanishing points, etc. Solve several geometric problems: (a) To bisect a straight line; (b) to bisect an angle; (c) to erect a perpendicular at the end of a line; (d) to erect a perpendicular at a given point; (e) to divide a line into several equal parts; (f) to construct a pentagon.

Make free-hand working drawings of simple geometric solids such as the cube, square, prism, cylinder, triangular prism, cone, sphere. Use neat free-hand lettering on these drawings, having regard to placing.

March—April—May.

Make large quick sketches of animals. Draw in accented pencil outline from the posed figure. Make large studies in pencil outline of hats, shoes, rubbers, etc. Study buildings and towers from windows. Draw the street scene with attention to perspective. Make careful pencil sketches of budded twigs and spring flowers. Place these in color composition.

PICTURE STUDY.

The following pictures are suggested. Selections may be made from the list. It is not expected that all of them will be taught.

Grade I.

Feeding the Hens.....	Millet.
The First Step.....	Millet.
Can't You Talk.....	Holmes.
St. John and the Lamb.....	Murillo.
A Fascinating Tale.....	Ronner.
Kittens Playing.....	Ronner.
The Pet Bird.....	Von Breman.
The Cat Family.....	Reynolds, Adam.
Infant Samuel.....	Reynolds.
Baby Stuart.....	Van Dyke.

Grade II.

Dutch Girl with Cat.....	Hoecker.
Feeding Her Birds.....	Millet.
The Knitting Shepherdess.....	Millet.
Saved.....	Landseer.
The Sick Monkey.....	Landseer.
Miss Bowles.....	Reynolds.
The Farm Yard.....	Roll.
Children of the Shell.....	Murillo.
The Divine Shepherd.....	Murillo.
A Helping Hand.....	Renouf.
Young Handel's First Efforts.....	Dicksee.

Grade III.

School in Brittany.....	Jeoffroy.
French Boys in School.....	Jeoffroy.
The Age of Innocence.....	Reynolds.
King of the Forest.....	Landseer.
Horseshoeing.....	Landseer.
Going to Work.....	Millet.
Pilgrims Going to Church.....	Boughton.
Madonna of the Chair.....	Raphael.
At the Watering Trough.....	Dagnan Bonveret.
The Sheepfold.....	Jacque.

Grade IV.

Village Blacksmith.....	Herring.
Arrival of the Shepherd.....	Le Rolle.
The Balloon.....	Depre.
The Gleaners.....	Millet.
The Angelus.....	Millet.
Pilgrim Exiles.....	Boughton.
The Mill.....	Ruysdeal.
Ploughing.....	Bonheur.
Lincoln.....	De Camp.
Mozart and Sister.....	Schneider.

Grade V.

The Connoisseurs.....	Landseer.
On the Alert.....	Bonheur.
By the River.....	LeRoll.
The Shepherdess.....	LeRoll.
The Sheepfold.....	Jacque.
On the Prairie.....	Dupre.
Return of the Mayflower.....	Boughton.
Sistine Madonna.....	Raphael.
John Alden and Priscilla.....	Boughton.
Washington Crossing the Delaware.....	Leutze.

Grade VI.

Song of the Lark.....	Breton.
End of Labor.....	Breton.
The Sower.....	Millet.
Labor.....	Millet.
Return of the Mayflower.....	Boughton.
Christ and the Doctors.....	Hoffman.
Christmas Chimes.....	Blashfield.
Stag at Bay.....	Landseer.
Oxen Going to the Farm.....	Troyon.
Returning to the Farm.....	Troyon.
Mozart at Vienna.....	Hamman.

Grade VII.

Night Watch.....	Rembrandt.
The Syndics.....	Rembrandt.
The Mill.....	Rembrandt.
The Willows.....	Corot.
Dance of the Nymphs.....	Corot.
Lake at Ville d'Avary.....	Corot.
Embarkment of the Pilgrims.....	Weir.
Holy Night.....	Correggio.
Holy Family.....	Murillo.
The Avenue.....	Hobbema.
Mozart and Sister before Maria-Theresa.....	Ender.

Grade VIII.

Sir Galahad.....	Watts.
Virgin, Child, and St. John.....	Botticelli.
Frieze of the Prophets.....	Sergeant.
The Doge.....	Bellini.
Delphic Sibyl.....	Angelo.
The Old Temeraire.....	Turner.
The Golden Stair.....	Burne-Jones.
Boston Public Library.....	
Beethoven in Bonn.....	Seyendecker.

OUTLINE FOR STUDY.

The Picture.

Name of picture. Name of artist. Why it was painted. Story in the picture.
Center of interest. Composition. Where it is now.

The Artist.

A few facts as to nationality, when he painted, and where. Several of his best productions.

INDUSTRIAL EDUCATION.

HANDWORK.

The following outline of handwork in the first five grades offers suggestions for the work of an entire school year in each of the various grades, and is based upon a minimum time of 80 minutes a week. In adjusting the work and time schedule, always consider the needs of the pupils and try to satisfy these needs in the best possible manner. When possible, plan to have the manual work just before or immediately after recess, as much time may be saved in distributing or collecting material. Frequently, however, particularly in the lower grades, the work can be given to a great advantage when the children are restless or after they have been subject to a nervous strain.

In order to have unity, flexibility, and interest, the work has been grouped about the English, history, and geography as outlined in the course of study for the elementary schools of Pennsylvania, as prepared by the department of public instruction.

As a child's first experiences and interests are bounded by the home, the aim should be first to show the child's relation to the home life and then to broaden his view, gradually leading him to an understanding and an appreciation of the social and industrial activities surrounding him, and to the realization of the dignity of useful labor. Furthermore, in so doing the child is given many opportunities for the expression of his thoughts. These expressions of thought will at first be crude, but from the frequent comparisons he will make from time to time, with his observations, the sense of symmetry and proportion will be gradually developed.

No child can do his best unless happy. As true happiness never comes through the development of selfish interests, but rather by obedience to law and respect for the rights of others, the teacher should give group problems from time to time.

Many varieties of handwork are suggested, so that the many sides of child nature may be appealed to, and by following a number of the occupations, greater skill may be developed and a broader grasp of industrial conditions may be secured by the child.

The handwork should be directed, as much so as the other duties of the child; if not directed, it will become mere "busy work" and lose its value in the education of the pupil.

Do not expect accurate work from young children, but always have in mind the ages and abilities of the several pupils. The ultimate aim is not perfection in the details of the project, but the making of useful citizens.

While various forms of handwork are suggested, undoubtedly some teachers will find it advisable, at times, to use some other type of work better adapted to local conditions.

It is not thought that all schools will use all the projects mentioned, but the teachers will select those projects best suited to their needs.

There is no other material which will lend itself to so many purposes in the classroom as paper. The use of the scissors in cutting the various figures gives the child a valuable training in the use of hand and eye.

GRADE ONE.

Stories for Illustration.

The Little Red Hen from "Baby Days".....	Mary Mapes Dodge.
The Ginger Bread Man from "Baby Days".....	Mary Mapes Dodge.
The Little Tin Soldier.....	Anderson.
The Discontented Pine Tree.....	Anderson.
The Three Bears in Fairy Stories and Fables.....	Baldwin.
Stories of the Brownies.....	Bingham.

Historical Subjects for Illustration.

Indian Life: Indian Life. Indian Village. Cut from paper, tomahawks, bow and arrow, tents, assemble a number of tents so as to form a village. Make Indian's girl costume.

Thanksgiving. Cut from paper the various articles upon the Thanksgiving table. Mount them upon cardboard so as to represent the table set. Cut and mount figures to represent "Going to Grandfather's" and "Going to Church."

Washington's Birthday. Cut from paper and mount a hatchet and a cherry tree. Make a Washington's hat from paper.

Local Events. Cut figures from paper and arrange them so as to illustrate some event in local history.

Seasons and Special Days for Illustration, in Paper.

Autumn. Grapes, vegetables, cutting corn, thrashing, gathering apples and nuts, making cider and apple butter, husking corn, butchering.

Winter. Roasting apples, popping corn, coasting, snowballing, sleighing.

Spring. Cut and tear trees, garden tools, make pinwheels, windmills, etc.

Halloween. Make Jack O'Lantern lamp shade.

Thanksgiving. See historical subjects.

Christmas. Cut out toys, Christmas trees, stockings, fold fireplaces.

St. Valentine's Day. Make valentines.

Lincoln's Birthday. Fold flat-bottomed boat.

Washington's Birthday. See historical subjects.

Easter. Cut out flowers, eggs, chickens, rabbits, cut and fold a chicken coop. Fold Easter basket.

May Day. Make May Day baskets and May Day gowns from paper.

Memorial Day. Make a soldier's cap from paper.

Flag Day. Story of Betsy Ross. Make flags from colored paper.

Closing Day. Illustrate traveling; cars, trolley, boat.

Supplementary Work.

Paper Weaving. Single weaving: Mat, basket. Right and left weaving; bookmark, mat, napkin ring.

Paper Construction. Table, chairs, bedroom furniture.

GRADE TWO.

Stories for Illustration.

Hiawatha.....	Last part.
Fishing and Hunting.....	Mott and Dutton.
Eskimo Stories.....	Mary E. E. Smith.
The Christmas Story.....	Bible.
Robin Redbreast.....	Allingham.

Historical Subjects for Illustration.

Indian Life. Make bow and arrow, papoose cradle. Paper cutting to illustrate the Indian's method of securing food, trapping, hunting, fishing. Bead stringing.

Pilgrims. Make log cabins and church from paper. Arrange cabins and church on sand tables so as to form a settlement. Model in sand and form paper ship Mayflower. Make Pilgrim's hat, sword, cradle. Dutch windmill.

Nature Study and Geographical Subjects for Paper Construction.

Clock, sundial, wheel, weather vane, leaves, flowers.

Modeling from clay. Birds, eggs, vegetables.

Hallowe'en. Lantern.

Discovery Day. Sail boats, "Santa Maria," "Pinta," "Nina."

Thanksgiving. Puritan costume for boy or girl from paper.

Christmas. Cornucopia.

St. Valentine's Day. Valentine.

Washington's Birthday. Soldier's hat.

Lincoln's Birthday. Sailor's cap.

Arbor Day. Posters illustrating "Tree Planting" and "Treasure Trove."

Easter. Cut out flowerpot with flowers, and mount.

May Day. May Day basket from paper.

Memorial Day. Fan from red, white, and blue paper.

Flag Day. Flags of various countries from colored paper.

Vacation Days. Tents and lighthouse from paper.

Supplementary Work.

Cardboard construction. Napkin ring, lamp shade, pencil tray, basket, handkerchief box, pencil box, match holder, brush broom holder, bill holder, comb box.

Weaving. Spool weaving; toy reins. Cardboard looms; holder, rugs, hammocks.

Knotting. Jute hammock, whistle chain, raffia bag, twine bag, horse reins.

Braiding. Raffia, three and five strand.

GRADE THREE.

Stories for Illustration.

Docas, the Indian Boy. Snedden.

Hiawatha, Selections. Longfellow.

Historical and Geographical Subjects for Illustration.

Indian Life. "Docas." Weave small raffia baskets, make cart from cardboard, traps from cardboard and twigs, whistles from reeds and willows.

Columbus. Make in sand a relief map of the West Indies showing the landing place of Columbus.

In connection with Independence. Construction of forts and earthworks on sand table to illustrate some of the important engagements of the War of the Revolution.

Make from wood pulp a relief map of Pennsylvania, placing at the various localities the products of that region.

Special Days.

See suggestions for special days in grades one and two. These ideas may be carried out on a more elaborate plan for grade three.

Supplementary Work.

Weaving. Raffia rugs, jute rugs, yarn rugs, raffia cardcase.

Braiding and Weaving. Raffia picture frame, raffia brush-broom holder, raffia napkin ring, raffia needle book, raffia calendar back, raffia penwiper, raffia stamp box, raffia pin ball, raffia scissor's chain, raffia bookmark, raffia mat, raffia bag or purse, raffia shaving ball, raffia scrapbox, raffia handkerchief box.

Black Printing, using wooden pegs.

Local Industries or Local Improvements.

Make a study of some industry or improvement and illustrate by construction in paper or cardboard.

GRADE FOUR.**Stories for Illustration.**

The Pied Piper.....	Browning.
The Tent Dwellers.....	Dopp.
Thor and his Hammer in Norse Tales.....	Mable.
Adventures of a Brownie.....	Craig.

Historical Subjects for Illustration.

Virginia Life. Model on a sand table the section of Virginia where the first settlement was made. Construct the settlers' cabins, blockhouses, and stockades and place them on the sand table so as to illustrate the first settlement.

New England Life. Construct log houses, blockhouses from paper. Cut out trees, corn shocks, pumpkins, men, and arrange on a sand table so as to make a model of an early New England settlement.

The Dutch, Quaker, and other settlements may be illustrated after the manner of the Virginian and New England settlements.

Geographical Subjects for Illustration.

Commerce. Construct a harbor on a sand table, placing lighthouse, breakwater, ships, and wharves where they should be.

Lumbering. Construct a sawmill of paper or cardboard and determine its location on a mountain side modeled of sand.

Agriculture. Construct a farm house, barns, sheds, wagon, fences from cardboard. Cut from paper, horses, cattle and chickens. Arrange all the projects so as to form a small farm.

Local Industries may be treated after the manner of agriculture, commerce, and lumbering.

Special Days.

Elaborate the work given in grades one and two.

Supplementary Work.

Block Printing. Make block from clay, blotting paper, or some substitute.

Baskets. Splint and rattan sewing, vegetable, and waste-paper baskets. Rope and rush baskets and twisted raffia baskets.

Weaving. Rattan and raffia mat, raffia cover for drinking glass.

GRADE FIVE.**Historical Subjects for Illustration.**

Stories of the Army. Select some important campaign of the Revolutionary War and make a relief map in sand of the region placing the forts and battle lines in the proper positions.

Boonesboro. Construct from paper, the cabins, blockhouses, stockades, and arrange so as to represent Boonesboro as nearly as possible. Use twigs if possible.

The First Steamboat. Construct a model showing the Hudson River with the Palisades and the first steamboat.

The First Railroad. The first railroad may be treated after the manner of the first steamboat.

The Civil War. Select some decisive engagement of the Civil War and reproduce as nearly as possible the camps, battlefields, etc., on the sand table. Use sand and clay for the land and cliffs, wood for forts, paper for tents and houses.

The Great Industries. Using clay, cement, and wood, make a model of a mine or a furnace.

Special Days.

See suggestions for first and second grades.

Supplementary Work.

Basketry. Tied stitch rattan and raffia baskets and mats. Indian stitch baskets. Solid raffia plaque.

Weaving. Raffia porch pillow, bead chains, belts, and purses.

Knotting. Hammocks, shopping bags.

WASHINGTON.

"Teachers' Manual" in Drawing, from an "Outline Course of Study for Common Schools of the State of Washington."

DRAWING.

General Suggestions—

When drawing books are adopted for any county the publishers should be required to furnish enough courses of study and teachers' manuals to supply the teachers of the districts where such books are used. These manuals are loaded with most excellent suggestions. No teacher who expects to teach this subject can afford to attempt to get along without such a manual.

Connect all study of form and drawing as closely and naturally as possible with other lines of school work. Encourage especially all attempts at sketching from natural objects. If a drawing is distinctly bad, try to cultivate more thoughtful observation. The trouble is most likely to be a matter of imperfect observation. Have all drawing entirely free-hand, allowing no use of rulers for straight lines. Use eraser as little as possible. The object is not to get perfect results on paper, but to train senses, mind, and hand to work together.

Make an effort to have good pictures on the walls and encourage children to study and discuss them.

Encourage children to observe beautiful and appropriate forms in everyday objects; furniture, household belongings, etc. Start them in the habit of noticing how things are made and appreciate what is especially well designed as to form and color.

OBJECT DRAWING IN THE PRIMARY GRADES.

The most effective means of teaching drawing to primary pupils is by example. The teacher must lead, not push; must draw, not talk; show how by doing, not explaining. How does a boy learn to swim? (1) He sees other boys swim. (2) He wants to swim. (3) He tries and swims. It is the same with flying kites, playing marbles, jumping the rope, riding a bicycle, etc. They see; they have the desire; they learn. Your pupils will learn drawing precisely the same way if they have the opportunity.

Procure some simple objects; any simple form will do—leaves, box-elder seeds, simple flowers, etc.

(1) Give an object to each pupil and ask him to draw it on his slate or tablet. Let the pupils begin work immediately. Teach them to hold the object in one hand between the thumb and forefinger in an easy position, to look at it, and then draw, then to look again and do the same. The *try* is what you are after, not the drawing. (2) You step to the blackboard with the object between your thumb and forefinger and draw it on the board. Do not talk; do not explain; do not say a word; simply draw, and bright eyes will do the rest. Your drawing is not for them to copy, but to show how, to lead, to encourage. The pupils see how you draw, see the drawing on the blackboard, and try to do likewise. To be sure there will be more or less copying of your

drawing, but never mind; this is a tendency inborn in the human race and is a force that will serve you well if rightly directed, so when looking at the drawings of each do not judge harshly those who have copied your drawing, but lead them to draw what they see; to draw their own object and to use soft lines.

Turn the object over and draw it. There is no reason why pupils should not draw from two to six objects in one lesson and draw each as well as if only one were drawn. Slow, laborious drawing in a class of little ones is not desirable.

OBJECT DRAWING IN THE GRAMMAR GRADES.

How to collect objects.—Do not ask your pupils for objects in a general way, but be specific. Suppose you have 20 pupils and to-morrow wish potatoes for each pupil, ask "Who will bring 20 potatoes to-morrow for the class in drawing?" From those who volunteer choose one and hold him responsible for the 20 potatoes on the morrow. Write on the blackboard a list of objects you want and ask each pupil to pick out an object that he or she can bring to school. Charge each pupil with the object he agrees to bring and hold him to the charge until the debt is paid. A good collection of objects for drawing is very desirable.

The following objects are generally suitable and procurable for drawing:

Summer and fall objects.—Box-elder seeds, milk-weed pods, ear of corn, head of wheat, peach stones, a squash, chrysanthemums, asters, and sunflowers.

Winter objects.—Pine cones, birds' nests, wasps' nests, cocoanut, banana, lemons, leafless trees, etc.

Spring and summer objects.—Buds of various plants, catkins, leaves, grasses, roots, dandelions, pansies or violets, apple, peach, and cherry blossoms, crocuses, radishes, strawberries, etc.

Old, worn and broken objects.—Bowl, teapot, pitcher, jar, jug, oil can, lamp, candlestick, bottle, bucket, keg, waste basket, berry basket, umbrella, hat, baby's shoes, rubber overshoes, faucet, book, roll of paper, broom, skates, blocks of wood. Mounted birds, animals or reptiles are also good objects to draw from. Some small objects suitable to hold in one hand and draw with the other are: A key, fishhook, scissors, top, knife, buttonhook, nail, screw, corkscrew, toothbrush, padlock, buckle, spool.

Group of objects.—Hat, gloves, and cane or umbrella; plaster of Paris models; teapot, cup and saucer; pitcher and glass or mug; vase with a flower; basket of fruit; pumpkin cut in half; loaf of bread, bowl and pitcher; group of fruits; candlestick and book; pail and scrubbing brush; oil can, paint pot and brush.

Use and placing of objects.—If the objects are small, it is best for each pupil to have his own object. This can be very easily managed with such objects as leaves, buds, twigs, flowers, fruits, etc. It is not necessary for the pupils to have the same kinds of objects; each may have a different object and not at all interfere with the effectiveness of the class. The most effective way of placing large objects such as those under the head of "Old and broken objects," is to procure boards about a foot wide; place these across the aisles and place or group the objects in the middle of the board. In this position from twelve to fourteen pupils can see the objects plainly. Do not ask a large school to draw from one object placed on the teacher's desk.

How to draw objects.—If the object is long and slender, first draw the median line; second, with the unaided eye, choose points of prominence; third, roughly mark in proportions; fourth, finish.

When an object consists of one large part and several small parts, first, draw with light lines the large part; second, add the smaller parts to it; third, finish. For instance, when drawing the human head, do not begin with the nose or face, but draw the head first, and to the head add the smaller parts. The recognition of the shape of the whole or part of the object is of great aid in drawing. For example, in drawing a cat sitting down, recognize that the shape of the body of the cat is oval;

the head round, and the ears triangular. This simplifies the drawing of it. These familiar shapes are quite common in objects if you will but look for them, and when recognized are great aids in getting the proportion.

One of the best methods of drawing irregularly shaped objects containing considerable length and width, such as a hat or shoe, is to first take the length; second, find the width and block out the size with light lines; third, find and mark the prominent points; fourth, finish. Almost any point may be judged very accurately if the mind is concentrated on that point. We fail when we try to take in two or more points at the same time.

When drawing a group of objects such as named under the head of "Groups," first choose a prominent point; second, from this point locate several surrounding points with the unaided eye—the drawing of light lines from one point to another is a great aid in locating these points; third, lightly sketch in the shape of the objects and locate the detail; fourth, finish.

Drawing box-shaped objects.—The object should be at least three times its height away from you; it may be farther away than this, but if nearer the object will appear distorted.

Measuring.—Procure a box (a crayon box is an excellent model) and place it before you; hold your pencil at easy arm's length away; close one eye; let the upper end of the pencil correspond with one corner of the box, and with your thumb mark the other corner; this gives a unit with which to compare other lines. In order to learn how to measure, make several measurements of lines and compare them. In making measurements care must be taken to keep the pencil the same distance from the eye and not let the pencil slant or recede in the direction of the object. The pencil must be kept at right angles with the arm at all times. This is the most important point in measuring, and it must be observed. The general process of drawing box-shaped objects is as follows: First, draw the nearest vertical line; second, find the remaining vertical lines; third, find the courses; fourth, finish. First step: Place the object in position, draw the nearest vertical line any length you wish; this line (line 1) when drawn, becomes the unit of measure of all other lines in the drawing and determines the size of the picture. Second step: Find the position of vertical lines by comparing the length of line 1 with the horizontal distance between other vertical lines and make the same comparison in your drawing. Draw the vertical lines lightly and of indefinite length. Third step: To find the corners, hold your pencil horizontally and pass it up line 1 on the object, not on the drawing; note where it crosses the corner, that is, how far above the bottom or below the top of line 1; mark this point in your drawing on line 1, and from this point draw a light horizontal line to intersect the vertical line drawn in the second step (which is line 2). Where this line crosses line 2 it will mark a corner; find other corners in the same manner and draw lines from foot of line 1 to points of intersection. From top of line 1 draw lines parallel with last-mentioned lines and your drawing is complete. Any known point may be found by finding how far to the right or left and how far above or below it is of a given point in your drawing. For practice draw boxes at the right of the eye, at the left, above, below, above and to the right, below and to the left, etc.

In drawing a house, barn, shanty, shed, cabin, tent, etc., look at it as a box with a roof added to the top. In general these objects may be drawn as follows: First, take the nearest vertical line; second, find other vertical lines as in the case of the box; third, find the corners; fourth, locate the detail and finish.

First Grade.

First semester—

Recommended Minimum Course.

- (1) Observation of new surroundings and materials.
 - (2) Conversational lessons regarding landscape, clear blue sky, and soft green grass.
- Show good pictures.

(3) Awaken interest for color as a whole. Let children bring leaves, flowers, samples of cloth, etc.

(4) Draw autumn grasses and leaves. Use colors if possible.

(5) Draw fruits and vegetables. Use colors if possible.

Second semester—

Recommended Minimum Course.

(1) Conversational lessons regarding the coming spring.

(2) Conversational lessons about the landscape. Show pictures. Speak of the horizon.

(3) Have children bring early spring flowers.

(4) Study of birds and fowls.

(5) Draw landscape on board. Pupils draw it on paper. Fill in both sky and ground.

(6) Draw some animal. The rabbit is a good subject for Easter time. Color Easter eggs.

(7) Draw flowers, buds, and branches.

Supplementary Course.

(1) Sprouting of seeds. Study in different stages, and draw them.

(2) Stories of Hallowe'en sports. Make pictures on board. Let the children draw a pumpkin of good color.

(3) Landscape painting in water colors.

(4) Teacher to read stories of winter and Christmas time. Let children illustrate.

(5) Draw domestic animals.

(6) Observation and memory drawing.

Second Grade.

First semester—

Recommended Minimum Course.

(1) Conversational lessons about landscape.

(2) Teacher draw oblong on board and fill in ground and sky.

(3) Awaken a general interest in colors.

(4) Let children bring flowers and leaves. Draw them in colors.

(5) Draw something suitable for Halloween.

(6) Stories of winter, snow, and sleds. Illustrate them.

(7) Draw fruits, such as the "big red apple."

Second semester—

Recommended Minimum Course.

(1) Winter landscape in color.

(2) Talk about Lincoln; show pictures; draw.

(3) Design and make valentines.

(4) Draw or paint from budded twig, spring flowers, etc.

(5) Design and make simple Easter cards.

(6) Study and draw two domestic animals.

(7) Stories and drawings appropriate for decoration. Draw flag, drum, etc.

Supplementary Course.

(1) Read or tell stories. Let children illustrate.

(2) Sprouting of seeds. Study of grasses and grains. Drawings.

(3) Stories and illustrations of harvest time.

(4) Pictures and study of Puritan life.

(5) Thanksgiving time stories and illustrations.

(6) Stories and drawings of night and the moon.

(7) Indian colors of beads, blankets, baskets, etc.

Third Grade.

First semester—

Recommended Minimum Course.

(1) Show good pictures.

(2) Let children tell of beautiful places and things they saw during vacation.

(3) Let children recall some interesting picnic spot and make a picture.

- (4) Gather and make a collection of seeds; draw them.
- (5) Observe and discuss beautiful trees.
- (6) Study and draw autumn vegetables.
- (7) Draw collection of fruits.
- (8) Illustrated stories of Thanksgiving and Halloween.
- (9) Study of sunset skies.
- (10) Painting or drawing Christmas tree.

Second semester—

Recommended Minimum Course.

- (1) Make chart of primary and secondary colors.)
- (2) Winter landscapes in colors.
- (3) Design and make simple valentines.
- (4) Study and draw the rooster.
- (5) Stories of George Washington, illustrated.
- (6) Study budding branches.
- (7) Early foliage and flowers; dandelions, tulips, and lilies.
- (8) Study of animals. Draw from memory.

Supplementary Course.

- (1) Illustrating stories based on Mother Goose rhymes.
- (2) Color of landscape at night; houses indistinct; trees, etc.
- (3) Illustrate May Day stories.
- (4) Sunset and marine effects.
- (5) Picture studies of historic monuments.
- (6) Illustrate winter sports.

(Fourth Grade.

First semester—

Recommended Minimum Course.

- (1) Study of trees. Show pictures and illustrate on blackboard.
- (2) Study of berries.
- (3) Autumn leaves.
- (4) Simple groups of vegetables in color.
- (5) Fruits in color.
- (6) Thanksgiving studies.
- (7) Evergreen trees in connection with landscape.
- (8) Christmas stories illustrated.

Second semester—

Recommended Minimum Course.

- (1) Animal stories to be emphasized. Read good stories and show pictures. Bring a pet animal and study from living model if possible.
- (2) Stories suitable for Washington's Birthday to be illustrated.
- (3) Early buds and branches.
- (4) Early spring flowers. Paint or draw in colors.
- (5) Free-hand lettering.
- (6) Study the Robin Redbreast. Read or tell stories about him. Paint or draw him in colors.
- (7) Picture studies and illustrations appropriate for Decoration Day.
- (8) Study some familiar birds.

Supplementary Course.

- (1) Paint sunset.
- (2) Group mass of trees against sky.
- (3) Study fruit trees with ripened fruit.
- (4) Conversational lessons illustrated.
- (5) Appearance of houses and trees covered with snow.
- (6) Study of trees and foliage.

Fifth Grade.

First semester—

Recommended Minimum Course.

- (1) Collection and study of grasses; also wild flowers. Paint or draw.
- (2) Fruits and vegetables in colors—the tomato, red peppers, apples on branch, etc.
- (3) Study of autumn landscape. Make several sketches.
- (4) Illustrations for Halloween.
- (5) Picture study of Puritan life; Thanksgiving.
- (6) Typical winter landscape in colors. Read stories for illustration.
- (7) Still life. Group of Japanese lanterns in color.

Second Semester—

Recommended Minimum Course.

- (1) Outdoor sports, appropriate for season. Read stories. Illustrate in color.
- (2) Study of the lion. Stories and pictures. Draw in color.
- (3) Freehand lettering.
- (4) Early spring buds and flowers.
- (5) Typical spring landscape, blossoming trees, etc.
- (6) Grasses and wild flowers in color.
- (7) Study of familiar birds.

Supplementary Course.

- (1) Studies of berries, seed pods, etc.
- (2) Study of pictures of great artists.
- (3) Illustration of stories.
- (4) Wild animal study.
- (5) Draw a vase from object.
- (6) Draw an empty basket showing the interior.
- (7) Draw some kitchen utensils.

Sixth Grade.

First Semester—

Recommended Minimum Course.

- (1) Study of some simple garden flowers. Paint or draw in color.
- (2) Study of fruit on the branch.
- (3) Study of grasses, large weeds, or plants bearing seed pods.
- (4) Autumn landscape in colors.
- (5) Story of first Thanksgiving, illustrated.
- (6) Pictures of towers, steeples, and domes.
- (7) Picture study appropriate for Christmas.

Second Semester—

Recommended Minimum Course.

- (1) Still life. Arrange simple study of bowl and vegetables.
- (2) Animal life. Drawing of animals from memory and definite pose.
- (3) Dog and cat. Bring them to school if possible and work from living model.
- (4) Initial and motto lettering.
- (5) Continue drawings from nature.
- (6) Summer landscape in color.
- (7) Draw hats or caps in different positions.

Supplementary Course.

- (1) Life and action studies.
- (2) Illustrate selection from Hiawatha.
- (3) Nature study in color.
- (4) Color contrasts of seasons.
- (5) Draw a hat box in three different positions.
- (6) Draw an open book.
- (7) Draw the schoolroom door.

Seventh Grade.

First Semester—

Recommended Minimum Course.

- (1) Study and sketch grasses, weeds, and flowers.
- (2) Vegetable study in color.
- (3) Study of landscape pictures of masterpieces.

- (4) Draw trees from memory.
- (5) Picture study of masterpieces appropriate for season.
- (6) Paint snow scenes from memory in color.

Second Semester—

Recommended Minimum Course.

- (1) Life and action. Outdoor games, etc.
- (2) Sketch winding roadways and rows of trees.
- (3) Sketches of country houses, roadways, fences, etc.
- (4) Initial letters and mottoes.
- (5) Studies of early spring.
- (6) Marine scenes from description, imagination, or observation.
- (7) Landscape and marine in sunset and moonlight.

Supplementary Course.

- (1) Landscape in wash or charcoal.
- (2) Still life. Arrange simple group of teapot, bowl, etc. Make simple, quick sketches, avoiding detail.
- (3) Life and action. Quick action studies of single figure, showing different positions and attitudes.
- (4) Typical summer landscape involving principles of perspective and figure study.
- (5) Draw a bat and ball mitt.
- (6) Illustrate Snowbound.

Eighth Grade.

First Semester—

Recommended Minimum Course.

- (1) Study of grasses, weeds, flowers, etc.
- (2) Decorative compositions from fall flowers, fruits, berries, etc.
- (3) Arrange and decorate calendar.
- (4) Study of landscape from good pictures.
- (5) Pupils give word pictures and class illustrate.
- (6) Thanksgiving picture study.
- (7) Draw object having large handle or spout.

Second Semester—

Recommended Minimum Course.

- (1) Life and action. Show pictures of masterpieces of figures in action. Make quick sketches of figures in action.
- (2) Sketching from pose in pencil or charcoal.
- (3) Sketching houses from observation.
- (4) Decoration of calendar.
- (5) Study of early spring flowers.
- (6) Illustrated mottoes.
- (7) Landscape scenes.

Supplementary Course.

- (1) Freehand lettering.
- (2) Observation and window sketching in pencil.
- (3) Studies of grasses, weeds, and simple growths in life size. Make brush studies in ink or charcoal.
- (4) Draw a chair on a table.
- (5) Draw a fish.
- (6) Draw a stove or other simple object.
- (7) Work in decoration.

GRADE OUTLINES OF CITIES.

The following cities are represented by grade outlines either in part or in whole:

Boston, Mass.
Worcester, Mass.
Springfield, Mass.
Pittsburgh, Pa.
St. Louis, Mo.

Minneapolis, Minn.
Denver, Colo.
Salt Lake City, Utah.
Los Angeles, Cal.
San Francisco, Cal.

BOSTON, MASS.¹

"Drawing and Manual Training"—An outline of Lessons for Boston Elementary Schools, Grades I, II, III.

PART 1.—DRAWING.**FIRST GRADE.**

Five 20-minute periods a week.

NOTE.—The chief thing is that children draw. The kind of line produced or how the pencils are sharpened or held is of slight importance. Improvement will come through repeated effort intelligently guided by the teacher. Do not be too anxious about good results at first. However small the percentage of good drawing, if it steadily increases, the work is progressing as it should. Make use of any occupation that gives children practice in outlining form, such as drawing for busy work, or illustrating incidents, or cutting out pictures.

SEPTEMBER.*First and second weeks.*

Make two or three very simple drawings on the blackboard of common objects, and let the children imitate by laying colored sticks, splints, or pegs.

Let them repeat the representation of one object several times, and then, if possible, draw this with pencil or crayon.

Continue work similar to that of the first week, or let children cut out printed pictures to learn to use scissors and to follow outlines of shapes. Use such material as magazines, catalogues, etc.

OCTOBER.*First week.*

1. From a blackboard sketch or picture of the rainbow teach the children to name the six standard colors. Find these colors in the box of crayons, and make stripes at least an inch wide. These may be cut into small pieces and used in review lessons.
- 2, 3, and 4. Construct with colored sticks, splints, or pegs one of the following objects: A chair, table, ladder, fence, or window, and draw with pencil or crayon.
5. Have the children select and arrange in six color groups such objects as pegs, sticks, pieces of paper, cloth, or yarn, having coloring like the six rainbow colors.

Second week.

1. Practice filling in squares, circles, printed pictures, or outlines with the crayons,
- 2, 3, and 4. Construct with colored sticks, splints, or pegs one of the objects suggested last week, and draw with pencil or crayon.
5. Color. Find the rainbow colors in natural objects or pictures of birds, flowers, butterflies, etc.

¹ Theodore M. Dillaway, supervisor of manual arts.

CHART OF A COURSE IN DRAWING, DESIGN, AND HANDICRAFT FOR THE GRADES.¹

Tabulated by Nat. L. Berry.

Room, Fine and Industrial Arts in Elementary Schools, by Walter Sargent.

and art, to find enjoyment in the intelligent exercise of their constructive and artistic abilities, and to have a general sympathetic attitude toward art and industry. Such a training should prepare our coming men and women to take a helpful part in the world's activities and to increase their range of enjoyment.

VII
and
VIII

ILLUSTRATIVE DRAWING—Personal experiences, school studies, etc. Sketch-

objects when placed in several different positions.
MATERIALS—Pencil, brush, and ink and water color, various illustrations for suggestion.

BOYS

GIRLS

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DECORATIVE PRACTICE—
Interpretation of natural forms in terms of ornament.
Experimental sketches—modification.
Adaptation of elements to printing it.

Refinement, harmony.
Study leaves, forms, schemes for schemes.
Harmonizing of colors by mixing a common element with each.
SELECTION—fitness to purpose, beauty of form, and color furnishings, pictures, vases, etc., for actual need.
Buildings, pictures, art objects, chosen for training in perception.

¹ Reprinted from the "School Arts Magazine," Boston, Henry Turner Bailey, editor.

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Third week.

1. Practice filling in squares or circles with rainbow colors.
- 2, 3, and 4. Construct with colored sticks, splints, or pegs one of the following: Front view of a house, skeleton figures without knee or elbow joints, and draw with pencil and crayon.
5. Optional.

Fourth week.

- 1 and 2. Draw the skeleton figure in different positions—jumping, sitting, reclining, running, etc.
- 3 and 4. Illustrate one or more of the following, using skeleton figure: "Giving Sister a Ride in the Cart," "Playing Tag," "At the Dinner Table."

Fifth week.

- 1 and 2. Draw a street scene consisting of front views of houses and figures in different positions.

NOTE.—Establish the street lines first, then draw the houses, and finally add the figures.

- 3 and 4. Construct objects with sticks, etc., and draw the following: Tables, chairs, cupboards, window.

NOVEMBER.

First week.

- 1 and 2. Draw the German flag from models furnished by the third grades.
3. Children color the German flag model with crayons. Top stripe black, middle stripe white, bottom stripe red.
4. Color the flags drawn from the models in Lessons 1 and 2.
5. Optional.

Second week.

NOTE.—Teachers may select other related objects for the lessons this week.

1. Make a freehand cutting from paper of the front view of a table.
2. Make a freehand cutting of chairs to go with the table made in the previous lesson.
3. Make freehand cuttings from paper of dishes to go on table.
4. Arrange the table, chairs, and dishes to form groups.
5. Optional.

Third and fourth weeks.

Illustrative drawing and cutting of a Thanksgiving story or a Thanksgiving souvenir, e. g., a dinner card or a cover for a Thanksgiving booklet. (See "School Arts Book.")

DECEMBER.

First and second weeks.

NOTE.—Teachers may select other material suitable for Christmas work.

1. Let children draw an evergreen tree with colored crayon.
- 2 and 3. Make a freehand cutting of an evergreen tree. (See Figure 2.)
4. Illustrative sketch of some story or incident relating to Christmas.
5. Optional.

Third week.

1. Fill in outline of star with colored crayon. Patterns of stars may be obtained from second-grade teacher.
- 2 and 3. Cut the star and attach a string, or the star may be mounted on a sheet of paper.
4. Color printed outline of Santa Claus.
5. Optional.

JANUARY.

First week.

Constructive cutting, i. e., building up objects from shapes, e. g., a cart, shovel, horn or bugle, broom, long-handled floor brush, cart, drum, doll carriage, etc.

1. Have the children make a picture of some object, e. g., a shovel, horn, broom, cart, drum, or other object.
- 2 and 3. Have the children make a paper cutting of the object drawn in last lesson, after the teacher has made several to show them how.
4. Make memory drawings of the object studied in last lesson. Let some children work at the blackboard while others work at their seats.
5. Make an illustrative drawing, involving the objects studied this week, e. g., "Parade," "Sweeping Day," "Going to Market."

Second week.

1. Have the children draw a picture of one of the objects suggested.
- 2 and 3. Show the children how to make a freehand cutting of the object drawn last week and have them make several.
4. Make memory drawings of the objects studied in Lessons 1, 2, and 3 this week. Let some children work at the blackboard while others work at their seats.
5. Have the children make an illustrative sketch involving the objects studied this week.

Third week.

1. Have the children make a picture of some object in common use, as a cart or other suggested object.
2. After the teacher has made several cuttings, have the children make paper cuttings of the object drawn in the last lesson.
3. Make, from memory, drawings of the object studied last lesson. Let some children work at the blackboard while others work at their seats.
4. Make an illustrative sketch involving the object studied this week.
5. Optional.

Fourth week.

1. Have the children trace, cut, and fold a pattern of a sled.

NOTE.—A sufficient number of patterns can probably be obtained from Grade III.

2. Have the children make a freehand cutting of a pattern of a sled.
3. Make, from memory, drawings of the sled. Let some children work at the blackboard while others work at their seats.
4. Make an illustrative sketch involving the sled.
5. Optional.

SECOND GRADE.

Five 19-minute periods are allowed each week for drawing and one 30-minute period for manual training.

NOTE.—Avoid putting drawings on the blackboard for the children to copy, for it is most important that the child should begin to see through his own eyes rather than through those of the teacher. Make use of any occupation that gives children practice in outlining form, such as drawing for busy work, or illustrating incidents, or cutting out pictures, or laying sticks, splints, or tablets to represent objects and illustrate stories.

Disposition of completed work.—Supply each child with an 8-inch by 11-inch envelope, as furnished, in which to keep all drawing and constructive work until the end of the year.

SEPTEMBER.

First week.

- 1 and 2. Review the six standard colors, using colored objects and crayons.
- 3 and 4. Children make houses and stores with splints, pegs, or colored sticks and draw them with crayons.
5. Optional.

Manual Training.

NOTE.—The objects made this month are to serve as models for the drawing lessons in fourth week of January.

Rug. Measuring and ruling.

After a few words about the shape and markings of simple rugs, give each child a piece of the 6-inch by 9-inch drawing paper and have him rule a straight line across it parallel to and 1 inch from each short edge. Have wide crayon lines made over those pencil lines, colors to be selected by the children.

Towel. Measuring, ruling, and cutting.

Give each child one-half a piece of the 6-inch by 9-inch drawing paper, and have him draw a line parallel to and 4 inches from the best long edge. Have him cut on this line, forming the towel 4 inches wide and 6 inches long. Have straight lines ruled across the models parallel to and 1 inch from the short edges.

Second week.

- 1 and 2. Make a color scale consisting of light, standard and dark red. Use crayons. Dark red may be obtained best by putting black on the paper first and then adding red.
- 3 and 4. Construct skeleton figures with sticks or pegs and draw with pencil and crayons. If sticks or pegs are not obtainable have the children draw from sketches on the blackboard.
5. Optional.

OCTOBER.

First week.

Manual Training.

Towel.—Concluded.

Have lines crayoned as in rug, but not so wide, and have ends snipped up to lines to form fringe.

1. Review the six standard colors. Observe color of pictures, natural and artificial objects, e. g., birds, butterflies, flowers, etc., and compare with the standards.
2. Make or color scale consisting of light, standard and dark red.
- 3 and 4. Draw some object having red color, e. g., apple, beet.
5. Optional.

Manual Training.

Flag of Japan. Measuring, ruling, drawing around circle, and cutting.

Give each child one-half piece of the 6-inch by 9-inch white drawing paper; that is, a piece $4\frac{1}{2}$ inches by 6 inches. Have him then rule and cut on a line parallel to and $3\frac{1}{2}$ inches from the better long edge. Have him then rule and cut on a line parallel to and $5\frac{1}{2}$ inches from the better short edge. A circle, to be located with its center slightly to the left of the center of the rectangle, is to be drawn around inkwell cover, or other convenient object, which should be of a diameter slightly greater than one-half the width of the rectangle. Filling in the circle with red crayon completes the flag.

Second week.

- 1 and 2. Make color scales consisting of light, standard and dark orange and yellow.
- 3 and 4. Draw yellow or orange flowers, leaves, vegetables, or fruits.
5. Optional.

Manual Training.

Flag of Denmark. Measuring, ruling, and cutting.

Give each child one-half piece of the 6-inch by 9-inch white drawing paper; that is, a piece $4\frac{1}{2}$ inches by 6 inches. Have him then rule and cut on a line parallel to and $2\frac{1}{2}$ inches from the better long edge. Have him then rule and cut on a line parallel to and 4 inches from the better short edge. Four light lines are then to be drawn, 1 inch and $1\frac{1}{2}$ inches from the better edges, parallel, two to the long edge and two to the short edge. Filling in the corner rectangles and squares with red crayon completes the flag.

Third week.

- 1, 2, and 3. Make color scales consisting of light, standard and dark green, blue and violet.
4. Color pictures of people, cut from magazines or papers, with tones of blue or violet.
5. Optional.

Manual Training.

Flag of Switzerland (or the Red Cross Society or automobile sign for physicians and clergymen). Measuring, ruling, and cutting.

Give each child one-half piece of the 6-inch by 9-inch white drawing paper; that is, a piece $4\frac{1}{2}$ inches by 6 inches. Have him then rule and cut on a line parallel to and 4 inches from the better long edge. Four light lines are drawn parallel to and $\frac{1}{2}$ inch, $1\frac{1}{2}$, $2\frac{1}{2}$, and $3\frac{1}{2}$ inches from the better long edge and four to be drawn parallel to and $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$, and $4\frac{1}{2}$ inches from the better shorter edge. Filling in the background of the white cross with red crayon completes the flag. For Red Cross flag, have cross crayoned red instead of background. For automobile sign, have cross crayoned green.

Fourth week.

- 1 and 2. Make free-hand pencil sketches of the flag of Denmark constructed in the manual training this month. Do not permit ruling or tracing.
- 3 and 4. Color the sketches of flag made in Lessons 1 and 2 this week.
5. Optional.

Manual Training.

Penwiper. Construction.

Have a finished penwiper to show the class. Discuss its use and the method of its construction, and pass it among the children that they may see and handle it personally. On drawing paper have each child trace around inkwell cover, or other convenient and preferably larger object, to form a circle, and cut out.

Fifth week.

- 1 and 2. Make sketches of the flag of Switzerland constructed in the manual training this month.
- 3 and 4. Color the sketches of the flag of Switzerland.
5. Optional.

NOVEMBER.

First week.

- 1 and 2. Make free-hand pencil sketches of the Japanese flag constructed in manual training this month.
- 3 and 4. Color the sketches of the Japanese flag.
5. Optional.

Manual Training.**Penwiper—Continued.**

If there are available objects from which circles of various diameters can be traced, concentric circles may be traced on the circle cut out during the previous lesson. The spaces between the concentric lines may be colored with crayon.

Second week.

1 and 2. Construct skeleton figures with sticks or pegs, and draw with pencil and crayons. If sticks or pegs are not obtainable, draw from blackboard sketches made by the teacher. Represent the figure in the following positions: Walking, sitting, kneeling, etc.

3 and 4. Use skeleton figures to express the following subjects: Indian, Pilgrims.

5. Optional.

Manual Training.**Penwiper—Concluded.**

Ask children to bring in scraps of cloth, which should be cut up into circles uniform in size with the paper circle. The most skilful workers might pink the edges. Have each child make holes in the centers of his cloth and paper circles with the point of the scissors or a pin, and fasten together with a paper fastener to be furnished. If it seems best, arithmetic or other soft paper may be used instead of cloth.

Third week.

1, 2, 3, and 4. Cut and draw objects pertaining to Indian life, e. g., wigwam, bow and arrow, canoe, etc.

Fourth week.

1, 2, and 3. Illustrative drawing relating to Indian life or Thanksgiving.

Manual Training.**Star. Construction.**

Have each child trace, from any available equilateral triangle, and cut out two triangles. Have these pinned or pasted together to form a pattern for a six-pointed star.

DECEMBER.

First week.

NOTE.—Teachers may select other material suitable for Christmas work this month.

1. Make freehand cuttings from paper of different sized evergreen trees.
2. Let the children draw an evergreen tree, using colored crayons.
3. Show the children how to make a picture of sky, snow, and evergreen trees by using colored crayons and white chalk. These should not be larger than 3 inches by 4 inches.
4. Make an illustrative sketch of some story or incident relating to Christmas.
5. Optional.

Manual Training.**Star—Concluded.**

Have each child trace, from pattern made in last lesson, and cut out a star. This may be crayoned and mounted if time permits.

Second week.

Topic.—Design: Christmas card.

NOTE.—Teachers may select other material for the design this month.

1. Have the children cut from drawing paper an oblong about 3 inches by 5 inches. Save this.
2. Show the children how to fold and cut a symmetrical evergreen tree. This should be small enough to look well on the 3-inch by 5-inch oblong.

3. Trace or mount the tree on the 3-inch by 5-inch oblong cut in Lesson 1. Color with crayons.
4. Illustrative sketch of some story or incident relating to Christmas.
5. Optional.

Manual Training.

Cornucopia. Construction.

Have each child place a sheet of the 6-inch by 9-inch white drawing paper vertically on the desk, and rule a line $5\frac{1}{2}$ inches from and parallel to the lower edge. Have him then draw a dotted line $\frac{1}{2}$ inch from and parallel to the left edge. On left edge, $\frac{1}{2}$ inch from bottom, he is to place a point, and draw a line from this point to bottom of line. This corner is to be clipped off and solid line cut. A hole is to be punched in upper right corner about $\frac{1}{2}$ inch each way from edges. Cornucopias are completed by rolling up as far as dotted line, and by fastening with pins or paste. Crayons may be used for border or other decoration.

Third week.

1. Fill in outline of a star with colored crayon.
- 2 and 3. Cut the star and mount on a sheet of paper.
4. Color printed outline of Santa Claus.
5. Optional.

Manual Training.

Fireplace. Measuring, ruling, and cutting.

Have sheets of 6-inch by 9-inch drawing paper placed with better long edge at the bottom. Five light lines are to be drawn parallel to and $\frac{1}{2}$, 3, 4, $4\frac{1}{2}$, and $5\frac{1}{2}$ inches from the better long edge. Three light lines are to be drawn parallel to and $\frac{1}{2}$, 1, and $2\frac{1}{2}$ inches from each short edge. Have lines darkened as follows to form shelf and details of fireplace: Starting from bottom, first horizontal between second and third verticals from each end; second horizontal between inner verticals; third and fourth horizontals across sheet between end verticals; and fifth horizontal across sheet between second verticals from each end. Starting from each end, first vertical between third and fourth horizontals; second vertical between first and third and between fourth and fifth horizontals; third vertical between first and second horizontals.

JANUARY.

First week.

- 1 and 2. Review vertical, horizontal, and oblique. Have children make illustrative sketches in which these lines are correctly used, e. g., in a sketch of a house interest the children in having the upright lines exactly vertical. Practice drawing vertical lines at the blackboard.
- 3 and 4. Make sketches of houses, doors, windows, fences, etc., involving horizontal and vertical lines. This lesson affords opportunities for definite observation and drawing of objects which are first constructed with sticks or splints.
5. Optional.

Second week.

1. Teach parallel. Practice drawing parallel lines at the blackboard, and find parallel lines in the room.
- 2, 3, and 4. Arranging sticks or splints to form objects involving parallel lines; draw the arrangements made.
5. Optional.

Manual Training.**Fireplace.—Concluded.**

Have shelf heavily crayoned brown to represent wood. Bricks may be marked off with black crayon and lightly crayoned red.

The fireplace may be cut out, cutting up through the center of the opening and along the top to form two flaps, which, blackened and bent back, will form appropriate supports; or it may be cut out completely and mounted on a piece of drawing paper of another color.

Third week.

1 and 2. Make pencil sketches of the fireplace from the model constructed in manual training.

3. Color the sketch of the fireplace.

4. Make an illustrative drawing involving the fireplace.

5. Optional.

Manual Training.**Badge. Construction.**

Give each pupil one-half of a piece of the 6-inch by 9-inch white drawing paper cut or torn lengthwise. From this piece have each child cut two 1-inch strips the full length. On one strip have dots placed $4\frac{1}{2}$ inches from the end on the edges and 5 inches from the same end in the center. Have lines drawn connecting these dots and cut.

Fourth week.

1 and 2. Make pencil sketches of the badge constructed this week.

3 and 4. Make pencil sketches of flat objects, e. g., envelopes, tags, shields, mats, etc.

5. Optional.

Manual Training.**Badge.—Concluded.**

NOTE.—Have the lesson precede the week's work in drawing.

On the other strip have dots similarly placed $2\frac{1}{2}$ and 3 inches from one end. Have lines drawn and cut. A third such piece is to be made, having dots placed $1\frac{1}{2}$ and 2 inches from a square end. Have a folding line drawn on this third piece $\frac{1}{2}$ inch from and parallel to the square end. Have pieces crayoned red, white, and blue, and fastened together with a pin, with the blue at the top.

THIRD GRADE.

Three 30-minute periods are allowed for drawing and one 30-minute period for manual training.

Make use of any occupation that gives children practice in outlining form, such as drawing for busy work or illustrating incidents, or cutting out pictures.

In ungraded classes where all the work indicated can not be accomplished, the illustrative sketching, object drawing, and color work should be carefully done.

Disposition of completed work.—Supply each child with an 8-inch by 11-inch envelope, as furnished, in which to keep all drawing and constructive work until the end of the year.

SEPTEMBER.**General suggestions.***Color.*

Establish clear concepts of the six standard colors and their light and dark tones, so that pupils are able to recognize, name, and match them in natural and artificial objects, e. g., birds, butterflies, flowers, cloth, pictures, etc. Color scales may be placed in a booklet.

Nature drawing.

Through the drawing with the lead pencil, develop power to observe and draw accurately (a) characteristic lines of growth of twigs, sedges, and grasses; (b) position and characteristic shapes of buds, leaves, and flowers.

Object drawing.

1. To accomplish best results in drawing, it is essential that children sit in an erect position and draw freely from the elbow. The pencil should be held in a flat rather than a vertical position and back from the point about two inches. These habits should be formed through frequent short drills, devoted to drawing lines in different positions. These drills may be done as a part of each drawing period.

2. Through arrangement and drawing of sticks, pegs, or splints to form fences, telegraph poles, houses, etc., develop power to draw from a given object involving horizontal, vertical, and oblique lines of definite lengths and in different positions.

3. Develop appreciation of characteristic shapes and proportions: (a) Through observation and drawing of objects of two dimensions, e. g., envelopes, tags, flags, mats, or similar objects; (b) through drawing the cube, square prism, boxes of different shapes, bowls, cups, jugs, bottles, and similar objects, so placed that the front view only is visible.

Before requiring the pupils to draw these objects at a distance, it is advisable to take an intermediate step in which each child is provided with an object which he places on a book and raises until he observes the front view only.

When the teacher feels that the pupils are able to represent the characteristic shape and proportions of objects near at hand they may then draw from objects at a distance.

In all lessons in which objects are drawn the pupil should first observe the object, then draw, compare the drawing with the object, noting and correcting errors; finally, make another sketch for improvement in shape and proportion.

It is advisable in object drawing to use the lead pencils having large leads.

Outline drawings may occasionally be filled in with crayons.

First week.

1. Review the six standard colors. Recognition of standards in objects, pictures, and crayons.

2 and 3. Make sketches of grasses with the lead pencil and crayons.

NOTE.—If possible, supply each child with a specimen having at least two blades.

(a) Observe direction and comparative length of blades. (b) Draw. (c) Compare drawing with the specimen. (d) Correct drawing. (e) Redraw for improvement.

Manual Training.

Tag. Construction.

Discuss use, form, and methods of reinforcing hole and of stringing. Give each child one-half piece of the 5½-inch by 7-inch gray cardboard furnished. Have rectangles, 2½ inches by 5 inches, drawn on cardboard, and cut.

Second week.

1. Make color scales of a tint, standard, and shade of red. Recognition of values of red in flowers and other objects. The pupils may make these color scales in form of a booklet. Shades of red may be obtained best by putting black on the paper first and then adding red.

2 and 3. Make sketches of grasses, sedges, or weeds with pencil and crayons.

Manual Training.

Tag.—*Concluded.*

Have two corners of tag marked out (½ inch) and cut off. Have hole located and made with scissors point. Have string inserted, using proper method. A ball of gray twine is furnished. To get a number of equal lengths, wind around book and cut.

Leaf Pattern.

Have the children trace outlines of leaves on gray cardboard and cut them out. These are to be sent to Grade I.

OCTOBER.

First week.

1. Make color scales of a tint, standard, and shade of orange. Recognition of values of orange in objects.
- 2 and 3. Draw twigs with the lead pencil or crayons. Endeavor to supply each with a specimen.

Manual Training.

"Cold Wave" Signal. Measuring, ruling, and coloring.

Use 6-inch by 9-inch gray or manila drawing paper placed vertically on desks. Have light lines drawn parallel to and 1 inch and 4 inches from the top edge. Vertical lines between these horizontal lines are to be drawn at distances of $1\frac{1}{2}$ and $4\frac{1}{2}$ inches from the left edge. On the edges of the square thus formed have dots placed 1 inch from the corners and connect by horizontal and vertical lines to form an inner 1-inch square. This inner square is to be black and the rest of the large square should be chalked white. Have meaning of signal lettered in at bottom of sheet.

Second week.

1. Make color scales consisting of a tint, standard, and shade of yellow. Recognition of values of yellow in flowers, wood, cloth, etc.
- 2 and 3. Make sketches with the lead pencil of the tag constructed last month.

Manual Training.

"Fair and Warmer" Signal. Measuring, ruling, and coloring.

Use 6-inch by 9-inch gray or manila drawing paper placed vertically on desks. Have 3-inch square drawn as for "Cold Wave" signal, but 3 inches lower on sheet end, omitting inch square. Have vertical line extended to top and bottom of sheet. From top of square have distance of 3 inches laid off, above, on extended line. Have a dot placed $2\frac{1}{2}$ inches to the right of the center of this 3-inch extension. From this dot have oblique lines drawn to ends of 3-inch extension, forming a triangle.

Third week.

1. Make scale of tint, standard, and a shade of green. Recognition of values of green in objects.
- 2 and 3. Drawing with pencil and crayons of twigs having berries or leaves.

Manual Training.

"Fair and Warmer" Signal.—Concluded.

Have square chalked white to indicate "Fair." Triangle is to be black for temperature signal. If this were below the blue flag it would mean "Colder." Have meaning of signal lettered in as before. Flagpole, with ball at top, and halyards may be added if time permits.

Fourth week.

- 1 and 2. Make scales of a tint, standard, and a shade of blue and violet. Recognition of light and dark values of these colors in objects. Match the color of objects having these colors.
3. Make sketches with the lead pencil of the "Cold Wave" signal. Review vertical, horizontal, and oblique lines.

NOTE.—Supply each child with a signal. Do not permit use of ruler or tracing around the object. Devote a few minutes each lesson to practice drawing horizontal, vertical, and oblique lines. Observe correct position of body and holding of pencil.

Manual Training.

Outline Flag of Germany (or Bulgaria, Nicaragua, or the Netherlands). Measuring, ruling, and cutting.

Give each child one-half piece of the 6-inch by 9-inch white drawing paper; that is, a piece $4\frac{1}{2}$ inches by 6 inches. Have him then rule and cut on a line parallel to and 3 inches from the better long edge. Have him then rule and cut on a line parallel to and 5 inches from the better short edge. Two lines are to be drawn parallel to and 1 and 2 inches from the better long edge.

Outline Flag of France (or Belgium or Roumania).

Give each child one-half piece of the 6-inch by 9-inch white drawing paper; that is, a piece $4\frac{1}{2}$ inches by 6 inches. Have him then rule and cut on a line parallel to and $3\frac{1}{2}$ inches from the better long edge. Have him then rule and cut on a line parallel to and $5\frac{1}{2}$ inches from the better short edge. Two lines are to be drawn parallel to and $1\frac{1}{2}$ and $3\frac{1}{2}$ inches from the better short edge.

NOTE.—These flag outlines are to be sent to the master of the district for distribution in Grade I.

Fifth week.

- 1 and 2. Make careful drawing of the weather signal from the model "Fair and Warmer."

NOVEMBER.*First week.*

- 1, 2, and 3. Make sketches with lead pencil of the "Fair and Warmer" signal. One of the lessons may be devoted to an illustrative sketch involving the signal. Review vertical, horizontal, and oblique. Devote a few minutes each lesson to pencil practice.

Manual Training.

Outline Flag of Spain. Measuring, ruling, and cutting.

Give each child one-half piece of the 6-inch by 9-inch white drawing paper, that is, a piece $4\frac{1}{2}$ inches by 6 inches. Have him then rule and cut on a line parallel to and $3\frac{1}{2}$ inches from the better long edge. Two lines are to be drawn parallel to and $\frac{1}{2}$ and $1\frac{1}{2}$ inches from each long edge.

NOTE.—These flag outlines are to be sent to the master of the district for distribution in Grade I.

Second week.

1. Color and cut out the printed outline of the Italian flag.
2. Make small free-hand pencil sketches of the Italian flag, and color with crayons.
3. Make a large free-hand drawing of the Italian flag, and color with crayons, or draw fruit or vegetable.

Manual Training.

Table. Construction.

Use large size drawing paper. Have each child lay out and cut a rectangle 4 inches by $9\frac{1}{2}$ inches. Light lines are to be drawn, parallel to and at distances of $\frac{1}{2}$ inch and 1 inch from the long edges, and 2 inches and $2\frac{1}{2}$ inches from the short edges.

Third week.

1. Color and cut out the printed outline of the Cuban flag.
2. Make small free-hand pencil sketches of the Cuban flag, and color with crayons.
3. Make large drawing of the Cuban flag, or draw a fruit or vegetable.

Manual Training.

Table.—*Concluded.*

Have the 2-inch squares at the ends of the sheet cut out, and have children cut on the second cross line at each end, as far as the first long line ($\frac{1}{2}$ inch). Have the first long line on each side folded the whole length, and also the second cross line at each end. In folding, have lines on the outside and folds well creased. Have the legs pasted inside the side pieces.

Fourth week.

- 1, 2, and 3. Make an autumn or Thanksgiving souvenir (see "School Arts Books"), or draw fruits and vegetables.

Manual Training.

Cart. Construction.

Give each pupil a sheet of the 5½-inch by 7-inch gray cardboard. Have lines drawn and cut 4 inches from best short edge. On large piece (cart body), have light folding (short dash) lines drawn 1 inch from each edge. Have all lines scored, and one short line cut at each corner. The card should then be folded, with scoring lines on the outside, and pasted with the laps inside.

DECEMBER.

First week.

1. Have the children draw an evergreen tree or a tree without foliage.
2. Make pencil sketches of the cart constructed in manual training. Read note in second week of this month's work.
3. Sketch skeleton figures drawing a cart or sled.

Manual Training.

Cart.—Concluded.

From pieces of cardboard remaining from last lesson have children cut wheels to be pasted to side of cart. These may be traced from inkwell covers or other circular objects. Any scraps remaining may be used up by the children in undirected construction of tongues, shafts, seats, etc.

Second week.

- 1 and 2. Illustrative drawing: "Bringing Home the Christmas Tree," or other topic related to Christmas.
3. Make pencil sketches of the table constructed in manual training, second week in November.

NOTE.—Each pupil should place the paper table upon a book and raise to such a level that the front view only is visible. After observing the proportion and shape of the table, the book may be lowered and sketch made; the book should be raised again for comparison between the sketch and the table.

Manual Training.

Cornucopia. Construction.

Lay a sheet of the 8-inch by 11-inch white drawing paper horizontally on desk. Mark center of top and bottom edges and connect with vertical line. On the upper edge make points 2 inches each side of center. By oblique lines, connect these points and the upper corners of the paper with the bottom of the vertical line. Cut on outside oblique lines.

Third week. (Design, Christmas Card.)

NOTE.—Teachers may select other suitable material for the design this month, e. g., Christmas tree ornaments, holly, mistletoe, candles, etc.

Manual Training.

Cornucopia.—Concluded.

Place points on the oblique lines ½, ¾, 1, and 1½ inches from the top. Connect these points with parallel horizontal lines. Fill in center ¼-inch space with colored crayons. Fold back on oblique and center lines, and fasten by turning down corners and pasting or pinning. A hole may be punched in top of back.

JANUARY.

First week.

1. Color and cut out the printed outline of the British flag furnished.
2. Make small sketches of the British flag and color with crayons.
3. Make one very careful drawing of the English flag, actual size, or make an illustrative drawing of one of the following, "Sliding" or "Skating in the Park."

Manual Training.**Sled. Construction.**

Have children lay out and cut rectangles $4\frac{1}{2}$ by $2\frac{1}{2}$ inches. Have light lines drawn parallel to and $\frac{1}{2}$ inch from each of the long edges. Have lines drawn parallel to the ends, and between the long lines, $1\frac{1}{2}$ inches from one end and $\frac{1}{2}$ inch from the other.

Second week.

- 1 and 2. Make pencil sketches of flat objects: Pocket book, cardcase, ladies' hand bag, etc.
3. Illustrative drawing: "Coasting," "Sliding," or "Skating in the Park."

Manual Training.**Sled—Continued.**

Have pupils cut on the long lines as far as the cross lines, and then have them cut on the cross lines. After folding up the sides of the sled, have the children shape with the scissors the front and back ends of runners. Handholes may be represented with pencil.

Third week.

- 1 and 2. Make sketches with pencil and crayons of the crayon box open part way. By opening the box quarter, half, and three-quarters excellent opportunity will be afforded to study proportion.
3. Illustrative drawing: "Street Scene in Winter."

Manual Training.**Sled—Concluded.**

Have the children trace around their sleds laid flat on gray cardboard. These patterns are to be cut out and sent to Grade I.

Fourth week.

- 1 and 2. Make pencil sketches of the sled constructed last week.
3. Illustrative drawing involving the sled.

Manual Training.**Chair. Construction.**

Use 6-inch by 9-inch drawing paper. Have each child lay out and cut a rectangle 4 inches by $4\frac{1}{2}$ inches. Have the best long edge to the front. Light lines are to be ruled as follows: $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, and $2\frac{1}{2}$ inches from the front; 1 and $1\frac{1}{2}$ inches from each side.

NOTE.—The chair will be concluded the first week in February.

PART TWO—DRAWING.**FIRST GRADE.**

Five 20-minute periods a week.

Disposition of completed work.—When the drawing envelopes become filled allow the children to take home completed work of the first half year.

FEBRUARY.*First week.*

1. Illustrative drawing or cutting.
- 2 and 3. Teach vertical. Have the children find vertical lines in the room. Have them hold pencils or rules in a vertical position. Let two or three draw vertical lines on the board to be tested by the teacher with a plumb line. Make sketches of vertical things, such as telegraph poles, window, lamp-posts, fences, ladders or chairs made with sticks or splints.

NOTE.—Let the work in representation this term be from objects rather than from the blackboard drawings.

4. Teach horizontal, using a similar method.
5. Optional lesson.

Second week.

1. Illustrative drawing or cutting.
2. Cut letters, using only vertical and horizontal lines, e. g., L, T, H, etc.
3. Draw these letters.
4. Construct fences, ladders, etc., with pegs, sticks, or splints and sketch with lead pencil. Aim to represent the object constructed.
5. Optional lesson.

Third week.

1. Illustrative drawing or cutting.
2. Teach oblique, using such methods as have been suggested for vertical and horizontal.
3. Cut straight-line letters, e. g., A, Y, M, W.
4. Draw these letters.
5. Make sketches involving oblique lines at various angles from objects constructed with sticks, splints, or pegs.

Fourth week.

1. Illustrative drawing or cutting for practice in vertical and horizontal lines.
2. Show the children how to make a picture of a simple house by laying pegs or splints. If time allows have them make more than one house, e. g., one taller than the other. Be particular about having vertical edges represented by pegs, or sticks in right position.
3. Have the children make a freehand cutting of a house.
4. Make sketches of different shaped houses constructed with sticks, pegs, or splints. Let some children work at the blackboard while other work at their desks.
5. Optional lesson.

MARCH.

First week. (Design.)

1. Have the children practice repeating a simple unit, counting in unison with the teacher as they draw. The first results on paper are of secondary importance. The main purpose is that the children, after some weeks of practice, gain ability to repeat forms in time with a rhythmic count as they gain ability to keep step in marching.
- 2, 3, and 4. Make freehand pencil and crayon sketches of flags. Provide each pupil with flag outlines furnished in October to serve as models.
5. Optional lesson.

Second week.

1. Repetition of units. See Lesson 1, first week.
- 2, 3, and 4. Make sketches of the simpler toys or continue sketching flags or objects constructed with pegs, sticks, or splints.
5. Optional lesson.

Third week.

1. Repetition of units. (Pl. I.) See Lesson 1, first week.
- 2 and 3. Sketch from pussy willow, alder catkin, or similar material. Use colored crayons or chalk.
4. Lay lentils or peas to represent a border of flower forms.
5. Optional lesson.

Fourth week.

1. Repetition of units. (Fig. 3.)
2. Draw a row of plants or flowers with colored crayons, repeating the same form so as to suggest a border.
- 3 and 4. Draw plants or flowers with colored crayons.
5. Optional lesson.

APRIL.

NOTE.—Color. The time devoted to the color lesson each week may, at the option of the teacher, be spent in short periods each day testing the children in the recognition of the standard colors. It is recommended that the teacher fill in with crayons, squares or circles not less than 3 inches in size, to represent each standard color. These may be used to identify standard colors in birds, flowers, fabrics, colored paper, and any other objects available for color study. They should serve to impress the intensity of the pure color upon the child's mind.

First week.

1. Repetition of units. See Lesson 1, first week in March.
- 2, 3, and 4. Making sketches of simple flat objects or objects constructed with sticks, pegs, or splints.
5. Color. Teach the standard red.

Second week.

1. Repetition of units. See Lesson 1, first week in March.
- 2, 3, and 4. Make sketches of twigs having opening buds. Aim to represent characteristic direction, position, and growth of stems. Lead pencil and crayon.
5. Review standard red and teach standard orange.

Third week.

1. Invention of units. Draw on the blackboard small, simple units composed of two or more straight lines parallel or crossing, or curved lines in forms suggesting simple flowers or leaves. Let children copy these and invent others.
2. Experiment with these to make a border, using lentils or peas to form the units.
- 3 and 4. Application of an original border to decorate one of the following objects:
The drawing portfolio or cover for other school work.
5. Review standard orange and teach standard yellow.

MAY.

First week.

1. Repetition of units. (Fig. 6.) See Lesson 1, first week in March.
2. Practice printing initials.
3. Print initials on the drawing portfolio or cover.
4. Color. Review standard yellow and teach standard green.
5. Draw plants, flowers, and other available material.

Second week.

Continue drawing of plants, flowers, and other available material.

Third week.

- 1 and 2. Talk about a room calendar for June. Let all the children try cutting large letters J-U-N-E. Select the best of each letter and paste in place on a large calendar mount.
- 3 and 4. Talk about suitable decorations, e. g., flowers of June, as daisies, dandelions, buttercups; or games, as fishing, jumping rope, etc. Decide on some one thing, e. g., daisies. All the children try cutting large daisies, from flowers or pictures. Save all good cuttings.
5. Color. Review standard green, teach standard blue.

Fourth week.

- 1 and 2. From the cuttings made in the previous lessons select those most suitable for the calendar. Have the class try different arrangements of these on the calendar mount, leaving space for numbers. Choose the best and paste in position.

3 and 4. Have the children cut initial letters for the days of the week, e. g., S, M, T, etc.

NOTE.—Before the next lesson the teacher should plan the number and size of squares necessary to fill the space left for the figures. Allow one square to each figure.

5. Have the children draw the different numbers on squares of this size. Use the best to mount in place, and thus complete the calendar.

JUNE.

NOTE.—Review the following each week in this month: Six standard colors, so that pupils are able to select any of these colors from assorted tints, shades or hues; horizontal, vertical, and oblique lines, so that children can readily distinguish and draw them at the blackboard or on paper with some facility.

First week.

1 and 2. Illustrate the letter R. For example:

“R is for Rabbit
Who had a bad habit
Of eating the flowers
In gardens and bowers,
Naughty fat Rabbit.”

Let each child cut a 6-inch square from a sheet of drawing paper. From the piece left cut free-hand a smaller square for the letter. Find best placing for this in the large square (preferably near the top) and trace around it. Cut or draw an R for this space.

3. Cut rabbits in different positions from pictures, memory, or life. Choose one and mount or trace somewhere in the remaining space.
4. Color review. Naming and selecting the standards.
5. Optional lesson.

Second week.

1. Color review. Select standards from assorted colors.
2. Review of horizontal, vertical, and oblique. Draw at blackboard and on paper.
3. Complete the rabbit initial by adding lines to suggest flowers or grass. Use colored crayons.
- 4 and 5. Optional lessons.

Third week. (Illustrative drawing.)

- 1 and 2. Review of colors and drawing of lines from memory.
3. Summer games, occupations and holidays, e. g., Seventeenth of June, Fourth of July.
4. Summer vacation. Picnics. A day at the park. A day at the beach.
5. Optional lesson.

SECOND GRADE.

Five 20-minute periods a week are allowed for drawing and one 30-minute period for manual training.

NOTE.—The chief thing is that children draw. The kind of line produced or how the pencils are sharpened or held is of slight importance. Do not be too anxious about good results at first. However small the percentage of good drawing, if it steadily increases the work is progressing as it should. Make use of any occupation that gives children practice in outlining form, such as drawing for busy work, or illustrating incidents, or cutting out pictures.

Disposition of completed work.—When the drawing envelopes become filled allow the children to take home completed work of the first half year.

SUGGESTIONS.

To accomplish best results in drawing it is essential that children sit in erect position and draw freely from the elbow. The pencil should be held in a flat rather than a vertical position and back from the point about 2 inches. These habits of correct positions should be formed through frequent short drills drawing lines in different positions and may be made part of the drawing period.

FEBRUARY.

First week.

1. Illustrative drawing or cutting.
2. Review vertical, horizontal, and oblique. Have children make illustrative sketches in which these lines are correctly used, e. g., in a sketch of a house interest the children in having the upright lines exactly vertical. Practice drawing vertical lines at the blackboard.
- 3 and 4. Make sketches of houses, doors, windows, fences, etc., involving horizontal and vertical lines. This lesson affords opportunities for definite observation and drawing of objects which are first constructed with sticks or splints.
5. Optional lesson.

Manual Training.**Valentine.**

NOTE.—See general suggestions.

Using white drawing paper, have each child draw and cut a rectangle $5\frac{1}{2}$ by 4 inches. Have lines ruled parallel to and $1\frac{1}{2}$ inches from each short edge. Valentine is to be folded on these lines.

Second week.

1. Illustrative drawing or cutting.
2. Teach parallel—use sketches and objects. Practice drawing parallel lines at the blackboard.
- 3 and 4. Arranging sticks or splints to form objects involving parallel lines, draw the arrangements made.
5. Optional lesson.

Manual Training.**Valentine—Concluded.**

Complete valentine. If desired flowers or hearts may be used as decoration. Patterns for the latter may be made by folding and cutting.

Third week.

1. Illustrative drawing or cutting.
2. Have children cut free-hand straight-lined letters, e. g., A, H, N, W.
- 3 and 4. Have the children cut the letters for the word FEBRUARY.
5. Optional lesson.

Manual Training.**Sketch Book.**

NOTE.—See general suggestions.

Have a finished book to show the pupils. Take it apart before them that they may note its construction. Give each child a piece of the 6-inch by 9-inch gray drawing paper, and have him draw a line $5\frac{1}{2}$ inches from and parallel to the best long edge, and then cut to the line. Working from the best short edge, have him then draw lines parallel to it and, respectively, $2\frac{1}{2}$, 5, and $7\frac{1}{2}$ inches from it.

Fourth week.

1. Draw one of the flag outlines furnished last term and color with crayons, or draw a flat object involving horizontal, vertical, and oblique lines, e. g., an envelope.
2. Have each child print his first or last name.
3. Have the children make free-hand cuttings of figures between 1 and 9.
4. Print name and number the pages in the sketch book made in the manual training lesson this week.
5. Optional lesson.

Manual Training.**Sketch Book—Concluded.**

Have papers cut on the three lines, and the three equal pieces folded separately at the center. These are then to be put together and pinned through the back to form a book which may be used for sketches. See drawing outline, fourth lesson of this week. The book may be used for an illustrated alphabet, selecting simplest letters.

MARCH.

NOTE.—Color. The time devoted to the color lesson each week may, at the option of the teacher, be divided into short daily periods testing the children in the recognition of the light or dark tones of the standard colors. It is recommended that the teacher fill in with crayons, squares or circles, not less than three inches in size, to represent each standard color.

First week. (Design.)

One entire lesson each week may be given to this work in rhythm or five minutes may be taken from each daily lesson.

1. Have the children practice repeating a simple unit, counting in unison with the teacher as they draw. The first results on paper are of secondary importance. The main purpose is that the children, after some weeks of practice, gain ability to repeat forms in time with a rhythmic count as they gain ability to keep step in marching.
- 2, 3, and 4. Draw with the lead pencil and color with crayons the flags recommended for this grade; or draw flat objects involving horizontal, vertical, and oblique lines.
5. Optional lesson.

Manual Training.**Pin Wheel.**

NOTE.—See general suggestions.

Have the children lay out and cut 5½-inch squares of white drawing paper. Diagonals should then be drawn lightly. Have squares colored with crayons, selected by pupils. Ask children to bring in sticks, skewers, or clothespins for next lesson.

Second week.

1. Repetition of units. See Lesson 1, first week.
- 2 and 3. Drawing flat objects in pencil outline for proportion and shape.

NOTE.—If possible have each pupil supplied with an object. Suggestions—flags, small mats, penwipers, tags, shields, paper cross forms, etc.

4. Memory drawing of last two lessons.
5. Color. Review the light and dark values of standard red and orange.

Manual Training.**Pin Wheel—Concluded.**

Have 1-inch square tablets laid on the centers so that the corners will fall on the diagonals. Points should be made at these corners on the diagonals, and the diagonals cut down to these points. The pin wheel is then to be folded and pinned to stick, skewer, or clothespin.

Third week.

1. Repetition of units. See Lesson 1, first week.
- 2 and 3. Sketch with lead pencil the pussy willow, alder catkin, or similar material. Represent growth of stem and growing point of buds.
4. Lay lentils or peas to represent a border of flower forms. If this material is not available, cut or draw the flowers and follow the same plan.
5. Color. Review the light and dark values of standard yellow and green.

Manual Training.**Easter Card.**

Have each child lay out and cut a $5\frac{1}{2}$ -inch by $3\frac{1}{2}$ -inch rectangle of drawing paper. Light lines are to be drawn $\frac{1}{2}$ inch from and parallel to each edge, and darkened between intersections. Save these cards for drawing lesson as outlined next week.

Fourth week.

1. Repetition of units. See Lesson 1, first week.
2. With colored crayons apply border of plants or flowers to Easter card.
- 3, 4, and 5. Draw budding twigs with lead pencil. Aim to have each child observe and draw the characteristic growth and position of buds of the specimen he is studying.

Manual Training.**Clock.**

For the case have each child lay out and cut a 6-inch square of gray drawing paper. Have him draw a line $\frac{1}{2}$ inch from and parallel to the lower edge and a line $1\frac{1}{2}$ inches from and parallel to each vertical edge. He is then to draw vertical lines (six in all) between the lower edge and the horizontal line $\frac{1}{2}$ inch from each vertical edge and line.

The paper is to be folded back on the long vertical lines and the central portions of each panel below the horizontal line are to be cut out between the verticals.

APRIL.*First week.*

1. Repetition of units. See Lesson 1, first week in March.
- 2, 3, and 4. Drawing with lead pencil and crayons objects having curved edges. Practice drawing curved lines at the blackboard.

Manual Training.**Clock—Concluded.**

For the face, have each child cut out a circle of white drawing paper, about 2 inches in diameter, traced around any convenient form. This is to be marked like a real clock face, and then pasted onto the central panel.

Second week.

1. Repetition of units. See Lesson 1, first week in March.
2. Drawing twigs or grasses with lead pencil for growth.
- 3, 4, and 5. Draw the clock constructed in manual training from the object and memory.

NOTE.—Practice drawing curves at the blackboard.

Manual Training.**May Basket.**

From white drawing paper have each child lay out and cut a 6-inch square. He is then to fold on one diagonal and then reopen. From the corners which were together have him lay off, on each edge, $2\frac{1}{2}$ inches. Lines are to be ruled between these points parallel to the fold, and backward folds are to be made on these lines.

Third week.

1. Invention of units. For detailed suggestions see Grade I.
2. Practice making units of the right size to place upon the corners of the May basket made in manual training.
3. Draw units upon the corners of the May baskets, using colored crayons.
4. Color. Review light and dark values of standard blue and violet.
5. Final lesson.

Manual Training.

May Basket—Concluded.

Have four holes made in each basket 1 inch from short fold toward long fold and one-half inch from edges. Have handle of twine inserted.

NOTE.—If time permits, have the children make another from memory.

MAY.

NOTE.—In districts where it is difficult to obtain material for nature drawing plant seeds in sawdust and make drawings of different stages of growth.

First week.

1. Repetition of units. (Pl. I.)

Experiment with these over a surface, using colored crayons.

2. Color. Test for recognition of light and dark values of the standard colors.

- 3 and 4. Draw twigs having buds partly open.

5. Optional lesson.

Manual Training.

House Front.

Have each child lay out and cut from white drawing paper a rectangle 6 inches by $6\frac{1}{2}$ inches. Have him draw a line $4\frac{1}{2}$ inches from and parallel to the lower edge. Verticals are to be drawn between this line and the bottom $1\frac{1}{2}$, 2, and 3 inches from each vertical edge. Horizontals (1 inch long) are to be drawn $\frac{1}{2}$, 2, $2\frac{1}{2}$, and 4 inches from the bottom, between the pairs of vertical lines to form windows, omitting one of the lower lines where the door is to be.

Second week.

- 1 and 2. Draw plants, flowers, or other available nature material with colored crayons.

- 3 and 4. Drawing objects in pencil outline for proportion and characteristic shape.

5. Color. Test for recognition of light and dark values of the standards.

Manual Training.

House Front—Concluded.

The center of the top edge may be found by folding the sheet. This point is to be connected by oblique lines with the outer points on the upper horizontal lines to form slope of roof. If eaves are desired, see model in department exhibit. Have upper right and left corners cut out. Door and windows should be marked out with colored crayons to indicate paneling and lights of glass. A semicircular window may be drawn in the gable. Door may be cut on one edge and top and folded back. Houses will stand up if folded back on side verticals.

Third week. (Illustrative drawing: Occupations or stories.)

1. Arrange street scenes, using the house fronts constructed. Draw with pencils or colored crayons.

2. **Illustrative Paper Cutting.** (Subjects: The postman, milkman, or grocer.)

All children cut a large post with post box, the best one to be mounted on the blackboard, the bulletin board, or a large sheet of paper.

All the children make a cutting of a postman, the best to be mounted by the teacher to make a completed picture.

3. **Paper Cutting.** (Small for individual sheet.)

The same story illustrated in the previous lesson.

All the children make a free-hand cutting of a post and post box, the right size to look well on a small-sized sheet of gray paper. Mount this, cut the postman, and mount to complete the picture.

4. **More Careful Study of One or Two Objects in the Story;** e. g., careful cutting of a post box, made from a copy furnished by the teacher.

5. Optional lesson.

Manual Training.**Chicken Coop.**

NOTE.—See general suggestions.

Use 6-inch by 9-inch gray drawing paper. Have sheets marked out and cut 5 inches wide and full length of sheets. Have a center line drawn through the long way and a line drawn across the short way $2\frac{1}{2}$ inches from each end and parallel to it. Across the squares thus formed diagonals are to be drawn from the ends of the center line.

Fourth week. (Nature drawing.)

1 and 2. Draw plants, flowers, and other available material.

3 and 4. Illustrative drawing. Street scenes. Use house fronts constructed in the manual training.

NOTE.—Exchange with the third grade some of the house fronts for store fronts.

5. Optional lesson.

Manual Training.**Chicken Coop—Concluded.**

Have corners cut off on diagonals and have center lines cut as far as cross lines. Model may then be folded and pinned or pasted together. If time and ability permit, the roof and slats on the ends may be crayoned yellow, brown, or black to represent wood.

JUNE.

NOTE.—Give a short review of color once or twice a week this month. From a group of objects, e. g. cloth, yarns, colored papers, flowers, etc., having different colors, have pupils select the standard red, orange, yellow, green, blue, and violet.

First week.

1, 2, and 3. Have children print or write on common paper these two lines, using large printed M:

“Mistress Mary, quite contrary,
How does your garden grow?”

Cut this paper down to an oblong of suitable size and shape to inclose these lines. Have children experiment on sheet of drawing paper, moving this oblong about to find best placing. Mount this carefully.

4. Make free-hand cutting of Mary, busy in her garden.

5. Color. Test for recognition of light and dark tones of the standards.

Manual Training.**Fan.**

NOTE.—If preferred, Japanese parasol may be made instead of fan. See Outline for May, 1912, third and fourth weeks.

Give each child a piece of 6 by 9 inch paper and have him draw lines $\frac{1}{2}$ and 1 inch from and parallel to one of the long edges. Have him apply, between these lines, with colored crayons, a border of plants or flowers. Fan is to be plaited by folding on a line drawn $\frac{1}{2}$ inch from and parallel to one end of the sheet and then folding back and forth with first fold as a guide.

Second week.

1. Have children sketch or cut flowers from nature, pictures, or memory.

2. Have children cut butterflies, birds, or anything which might appear in Mary's garden.

3. Experiment with these cuttings to make a good decorative arrangement on the sheet which was prepared during the first week in June.

4. Have the best of these pasted on the sheet.

5. Optional lesson.

Manual Training.**Flag.**

Use large drawing paper. Have 13 lines drawn $\frac{1}{2}$ inch apart, parallel to a long edge. Have surplus strip cut-off. Have line drawn $\frac{1}{2}$ inch from and parallel to a short end, this margin being left for possible use in attaching flag to sticks, if available.

*Third week. (Illustrative drawing.)**

1. Summer games, occupations and holidays, e. g., Seventeenth of June, Fourth of July.
- 2 and 3. Summer vacation, picnics.
- 4 and 5. Sketching printed flags, or Japanese parasol from object and memory.

Manual Training.**Flag—Continued.**

Have a vertical line drawn down through seven of the spaces, $4\frac{1}{2}$ inches from the margin line. Have the horizontal line between this vertical and the margin line darkened, thus laying out star field. Within this field two vertical lines are to be drawn between the second and fifth horizontal lines, one to be 1 inch from the margin line and the other to be 1 inch from the right hand side of the field. The second and fifth horizontal lines should be darkened between these verticals. Have the star field filled in with blue crayon.

Fourth week.

- 1, 2, 3, and 4. Illustrative drawing. Subjects selected by the children.

Flag—Concluded.

Have the alternate horizontal stripes filled in with red crayon, noting that the top and bottom stripes are red. Have 13 of the white gummed stars (to be supplied) put in the blue field, on or within the small rectangle, as follows: One in the center, one on each corner, one in the center of each side, and three on each of the horizontal lines. Naturally a few words regarding the significance of the number of the stars and stripes will be appropriate.

THIRD GRADE.

Three 30-minute periods are allowed for drawing and one 30-minute period for manual training.

NOTE.—Make use of any occupation that gives children practice in outlining form, such as drawing for busy work, or illustrating incidents, or cutting out pictures.

In ungraded classes where all the work indicated can not be accomplished, the illustrative sketching, object drawing, and color work should be carefully done.

Disposition of completed work.—When the drawing envelopes become filled allow the children to take home completed work of the first half year.

GENERAL SUGGESTIONS.**Color.**

Establish clear concepts of the six standard colors and their light and dark tones, so that pupils are able to recognize, name, and match them in natural and artificial objects, e. g., birds, butterflies, flowers, cloth, pictures, etc.

Nature drawing.

Through the drawing with the lead pencil develop power to observe and draw accurately (a) characteristic lines of growth of twigs, sedges, and grasses; (b) position and characteristic shape of buds, leaves, and flowers.

Object drawing.

1. To accomplish best results in drawing it is essential that children sit in an erect position and draw freely from the elbow. The pencil should be held in a flat rather than a vertical position and back from the point about two inches. These habits should be formed through frequent short drills, devoted to drawing lines in different positions. These drills may be done as a part of each drawing period.

2. Through arrangement and drawing of sticks, pegs, or splints to form fences, telegraph poles, houses, etc., develop power to draw from a given object involving horizontal, vertical, and oblique lines of definite lengths and in different positions.

3. Develop appreciation of characteristic shapes and proportions: (a) Through observation and drawing of objects of two dimensions, e. g., envelopes, tags, flags, mats, or similar objects; (b) through drawing the cube, square prism, boxes of different shapes, bowls, cups, jugs, bottles, and similar objects, so placed that the front view alone is visible.

Before requiring the pupils to draw these objects at a distance it is advisable to take an intermediate step in which each child is provided with an object which he places on a book and raises until he observes the front view only.

When the teacher feels that the pupils are able to represent the characteristic shape and proportions of objects near at hand they may then be drawn at a distance.

In all lessons in which objects are drawn the pupil should first observe the object, draw, compare the drawing with the object, noting and correcting errors; finally, make another sketch for improvement in shape and proportion.

It is advisable in object drawing to use the lead pencils having large leads.

Outline drawings may occasionally be filled in with crayons.

FEBRUARY.

First week.

1. Illustrative drawing or cutting.
2. Review vertical, horizontal, and teach oblique by means of illustrations, sketches and study of objects.
3. Review of vertical, horizontal, and oblique. Make sketches of flat objects in pencil outline, e. g., card, envelope, penwiper, mat, flag, tag, shield.

NOTE.—Encourage each child to bring to the drawing lesson an object similar to one of those suggested. After each sketch the pupils may exchange objects. Observe the following steps in the lesson:

- (a) Observation of object for proportions and shape.
- (b) Sketching the object.
- (c) Comparison between the sketch and the object to discover mistakes.
- (d) Correction of sketch.

Manual Training.

Valentine.

NOTE.—The completion of the chair is postponed until the third week this year, to allow the valentine to be completed before February 14.

Use white drawing paper if possible. Have rectangles 2 by 3½ inches drawn, cut out and placed on desks with short edges horizontal. Have vertical lines drawn ¼ inch from and parallel to each long side. Between these lines have horizontals drawn 1 and 2½ inches from the best short edges. A vertical line should be drawn through the center of the rectangle thus formed and this line and the two horizontals cut to form double doors.

Second week.

1. Illustrative drawing or cutting.

2 and 3. Study lines meeting at angles. Suggest the different kinds of angles—right, acute, obtuse. First, observe the angle in objects, and then construct one with splints or sticks; make sketches of angles constructed on paper and at the blackboard.

NOTE.—In Lessons 3 and 4 devote some time to drawing the different kinds of angles at the blackboard and on paper.

Manual Training.**Valentine—Concluded.**

NOTE.—See general suggestions.

Have second rectangles 3 by 4½ inches laid out, cut and placed on desks, with short edges horizontal. On these are to be drawn rectangles with sides and tops ¼ inch and bottoms ⅓ inch from adjoining edges. All rectangles may be outlined with crayon and flowers or hearts used for decoration. Patterns for the latter may be made by folding and cutting. For each valentine, two strips of paper are to be cut 1 inch wide and 2 inches long, and plaited with ¼-inch plaits. These “springs” are then to be pasted to both parts of the valentine at top and bottom.

Third week.

1. Illustrative drawing or cutting.

2. Stick laying and sketching of objects having different angles. Devote a few minutes to the memory sketching of different angles.

3. Sketching flat objects on front views of simple toys having different angles. Encourage each child to bring an object to draw from. Observe same steps as suggested for Lessons 3 and 4, first week this month.

Manual Training.**Chair—Concluded.**

From the short, vertical edges have cuts made to the first vertical cross lines on the second and third horizontals, and to the second vertical cross lines on the fifth horizontal. On the outer verticals have cuts made between the second and third horizontals. On the inner verticals have cuts made between the front edge and the first horizontal and between the fourth horizontal and the back edge. Have backs folded forward on fourth horizontals. Other folds are to be made backward on first and fourth horizontals and on inner verticals. Contours of backs are to be varied by freehand cutting after experimenting with the large scraps remaining from cutting out the chair. Front laps are to be folded outside and pasted as in table.

Fourth week.

1. Illustrative drawing or cutting.

2. Have children lay splints to represent houses, with pitched roofs of different angles. Make a sketch of the chair constructed in manual training.

3. Have children make freehand cuttings of houses, with roofs pitched at different angles.

Manual Training.**Note-book.**

NOTE.—See general suggestions.

Precede dictation by the display of a finished book and its parts. For the cover, have each child lay out and cut from gray drawing paper a rectangle 6 by 4½ inches. Have a folding line (short dash) drawn 2½ inches from and parallel to a short edge. Have cover folded and creased with line outside. On the other short edge have a dot placed ¼ inch from each corner. On each of the long edges have a dot placed ¼ of an inch from the same corners. Have lines drawn connecting these dots and have corners cut off on the lines.

MARCH.

First week. (Design. Freehand drawing for proportion and characteristic shape of objects.)

One entire lesson each week may be given to this work in rhythm, or five minutes may be taken from each daily lesson.

1. Have the children practice repeating a simple unit, counting in unison with the teacher as they draw. The first results on paper are of secondary importance. The main purpose is that the children, after some weeks of practice, gain ability to repeat forms in time with a rhythmic count as they gain ability to keep step in marching. (See Plate I.)
- 2 and 3. Draw rectilinear objects in silhouette for proportion and characteristic shape, e. g., cube, square prism, box. Use black crayon or ink.

NOTE.—Have each child supplied with a model from which to draw. Read suggestions upon object drawing at the beginning of the February Outline.

Manual Training.**Notebook—Concluded.**

For the pages, have each child lay out and cut, from white drawing paper, one or two rectangles 4 by 4½ inches. Have these folded to bring the 4-inch edges together. These pages are to be tied into cover with twine, leaving long end to tie around book. Edge of cover, having clipped corners, is to be folded over to form flap. Have twine wound around and tied to complete. Simple lettering may be added if desired.

Second week.

1. Repetition of units. See Lesson 1, first week.
- 2 and 3. Drawing in silhouette objects for proportion and characteristic shape. Have each child supplied with an object.

Manual Training.**Drinking Cup.**

Have each child construct and cut from gray drawing paper a 6-inch square. Have the squares folded on one diagonal and placed with the right angle at the top. On the right and left edges have dots placed 2½ inches from the vertex. Have each lower corner folded to the dot on the opposite side, folding one corner forward and the other backward and show that raw edges, just folded, are parallel to the bottom fold. Have upper corners folded into the triangular pockets, one on the front side and one on the back.

Third week.

1. Repetition of units. See Lesson 1, first week.
2. Sketching lines of growth in twigs, stems, sedges, or grasses with the lead pencil. Have each child supplied with a specimen, so that he may be encouraged not only to observe more carefully, but to compare his drawing with the object to discover incorrect judgment of growth and thickness.
3. Make sketches of soldier caps constructed.

Manual Training.**Soldier Cap.**

From a newspaper have a square made as large as possible. As in drinking cup, have this folded on one diagonal, and the resulting acute angled corners folded over to the opposite sides, bringing the open edges parallel to the original diagonal fold. Have the caps finished as were the drinking cups.

Fourth week.

1. Repetition of units. See Lesson 1, first week.
2. Draw a row of plants or flowers with colored crayons, repeating the same form to suggest a border.
3. Draw a repetition of units on the Easter card so as to form a border between the parallel lines.

Manual Training.

Easter Card.

Have each child lay out and cut a $5\frac{1}{4}$ -inch by $3\frac{1}{4}$ -inch rectangle of white drawing paper. Light lines are to be drawn $\frac{1}{2}$ inch and $\frac{1}{4}$ of an inch from and parallel to each edge, and these lines darkened between intersections to form a double border. Use these cards for Drawing Lesson 3, this week.

APRIL.

First week.

1. Repetition of units. See Lesson 1, first week in March.
- 2 and 3. Drawing with lead pencil objects for proportion and characteristic shape.

NOTE.—When the pupils arrive at the point where they can represent the proportions and characteristic shape of objects near at hand (where each pupil has an object), have them draw objects at a distance.

Manual Training.

Shield.

Have each child draw and cut a rectangle $4\frac{1}{2}$ by $3\frac{1}{2}$ inches, and place it vertically on the desk. A horizontal line is to be drawn across it $1\frac{1}{2}$ inches from the top. On this line, and on the bottom edge, points are to be placed $\frac{1}{2}$ inch apart and connected by vertical lines.

On vertical edges have points placed $\frac{1}{2}$ inch from the top and have rectangle folded backwards on imaginary vertical center line. Top is to be cut from points on edges to top of folded edge, and bottom is to be cut from ends of horizontal line to bottom of folded edge. Have shield opened up and two equilateral triangles drawn in, one over the other, to form star. Colored crayons may be used to color this star blue and the alternate stripes red, the edge stripes being left white.

Second week. (Nature drawing.)

1. Repetition of units. See Lesson 1, first week in March.
2. Draw twigs with lead pencil and crayon for comparative growth of buds, e. g., pussy willow, alder catkin, maple, etc.
3. Draw the shield made in manual training. Furnish each child with a model from which to make a free-hand sketch.

Manual Training.

May Basket.

From a large sheet of white drawing paper have each child lay out and cut an $8\frac{1}{2}$ -inch square. Folding lines (short dash) are to be drawn $2\frac{1}{2}$ inches from and parallel to each edge. Have basket folded and creased on each of these lines.

Third week.

- 1 and 2. Continue studying and drawing with lead pencil and colored crayons to represent growth of stems and buds.
3. Make borders for the May baskets made in manual training.

Manual Training.

May Basket—Concluded.

Have baskets opened out flat and folded, first on one diagonal and then on the other. A hole is to be made on each diagonal, $\frac{1}{4}$ of an inch from the corners. Running long double lengths of twine through the holes will form handles and complete the baskets.

NOTE.—If time permits, have each child make another from memory.

MAY.

*First week. (Single ornament, around a center.)***1. Invention of Units.**

Draw on the blackboard large, simple units; e. g., start with a mark for the center, arrange curved or straight lines about it to suggest a flower form.

2. Paper Cutting.

Show the children how to cut similar units by folding paper.

3. Represent the proportion and characteristic shape of objects in outline and color.**Manual Training.****Store Front.**

Have each child lay out and cut a rectangle $6\frac{1}{2}$ by $4\frac{1}{2}$ inches and consider the best long edge as the bottom of the store front. Have him draw a vertical line $1\frac{1}{2}$ inches from each short edge. A horizontal line should then be drawn $3\frac{1}{2}$ inches from lower edge. Other horizontal lines extending only between the two verticals should be drawn $\frac{1}{2}$, $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$, and $4\frac{1}{2}$ inches from the lower edge. Have verticals drawn as follows: Between second horizontal and lower edge, $\frac{1}{2}$ and $1\frac{1}{2}$ inches from one vertical to form door; between first and second horizontals, $1\frac{1}{2}$ and $3\frac{1}{2}$ inches from same vertical to form show window; and between third and fourth horizontals, $\frac{1}{2}$, $1\frac{1}{2}$, $1\frac{1}{2}$, $2\frac{1}{2}$, 3, and $3\frac{1}{2}$ inches from same vertical to form upper windows.

*Second week.***1 and 2. Drawing with pencil and crayons the tulip, jonquil, or narcissus.****3 and 4. Represent the proportion and characteristic shape of objects in outline and color.****Manual Training.****Store Front—Continued.**

From each upper corner have small rectangles cut out. Door may be cut on one side and top, and folded back, or $\frac{1}{4}$ inch may be left at the bottom for steps and three sides cut. The sides of show window may be cut and a horizontal line between to form display counter and awning. Have the lower part folded backward and the upper part forward. The two rectangles at the sides should be folded backward to form the sides of the store. The projecting upper part should be folded forward on its lower and backward on its upper line.

*Third week. (Illustrative drawing: Relating to transportation.)***1. Illustrate a story told or read for language, or draw such subjects as cars, boats, motors, and other vehicles.****2. Paper Cutting. (Large for blackboard.)**

Use the same story or subject as in lesson 1; e. g., all children cut a large electric car, the best one to be mounted on the board, bulletin board, or large sheet of paper. All the children cut people running toward the car, the best to be mounted by the teacher to make a completed picture.

3 and 4. Represent the proportion and characteristic shape of objects in outline and color.**Manual Training.****Store Front—Concluded.**

Door and windows should be crayoned to indicate paneling, lights of glass, awnings, blinds, steps, and fruit, or vegetable display.

*Fourth week. (Nature drawing.)***1. Represent growth and color of tulips or other available flowers.****2. Make memory drawing of plants or flowers used in lesson 1.****3 and 4. Continue drawing plant forms or draw objects in pencil outline and color for proportion and characteristic shape.**

Manual Training.**Auto Truck.**

For the truck body, have each child draw and cut from a sheet of the 9 by 12 inch drawing paper a rectangle, $4\frac{1}{2}$ by $10\frac{1}{2}$ inches. Parallel with the best long edge, which will be the bottom of the truck, have him draw horizontals $\frac{1}{2}$, $1\frac{1}{4}$, and 2 inches from it. Parallel to one vertical edge (the front of the truck) have him draw lines $\frac{3}{4}$ and $2\frac{1}{2}$ inches from it, extending across entire height of paper, and other verticals (twelve in all), alternately 1 inch and $\frac{1}{2}$ inch apart, beginning from second long vertical and extending between first and third horizontals.

JUNE.

Topics: Illustrative drawing; street scenes; general review of color.

NOTE.—The review in color should consist of the six standard colors and their tints and shades. This may consist of matching with crayons objects having tones of the standards, and identifying them in collected objects.

First and second weeks.

Illustrative drawing.—Arrange the store fronts and automobiles to form street scenes. Draw these with crayons. Variety of buildings may be obtained by exchanging some of the store fronts for houses constructed by the second-grade pupils.

Manual Training.**Auto Truck—Continued.**

Have front lower rectangle cut and another at the rear lower corner formed by the first horizontal and a vertical drawn $\frac{1}{2}$ inch from the edge. The third horizontal is to be cut from the rear as far as the first long vertical, and this vertical from the top to the upper horizontal. The remaining upper part forms seat, hood, etc. Have long rectangles on upper part of truck body cut out, leaving $\frac{1}{2}$ -inch squares to represent posts.

Third and fourth weeks.

General color review and illustrative drawing.

Manual Training.**Auto Truck—Concluded.**

It is earnestly desired that, during the remainder of June, the manual-training periods be used by the children in carrying out the auto-truck problem still further, but as their individual ideas direct instead of from dictation. The truck bodies may be mounted, and such parts as steering gear, fenders, etc., can be made to measurement and added. Wheels may be traced around convenient forms and pasted to side of truck in proper position; chauffeurs, lights, and freight may be cut free-hand, and lettering and coloring added. Pupils should be encouraged to note and work out all these details for themselves.

WORCESTER, MASS.¹

Separate mimeographed sheets are issued as required. Color work is done in all grades: Crayons in grades one to three, inclusive; water color in grades four to eight, inclusive, both in high schools.

Illustration is taught in grades one and two; object drawing in all grades, including high schools; perspective in grades four to eight, inclusive, and in high schools; design throughout. In connection with our work we also include lessons in home furnishing in grades six to eight, inclusive, and in high schools.

Typical problems in design and color in grammar grades are—in grade five, decoration of linen mat 9 by 9 inches; grade six, decoration of small wood picture frame; grade seven, denim pillow 18 by 18 inches; grade eight, decoration of wood box 6 by 6 by $2\frac{1}{2}$ inches. In each grade standard designs are given and original modifications made by the pupils.

¹ Edward H. Thornhill, supervisor.

In our study of home furnishing, talks concerning good taste are given, and each pupil makes a scrapbook of clippings of illustrations of good and "not so good" objects, such as chairs, tables, lamps, floor coverings, etc. We consider this of much more value than the so-called picture study.

Perspective in the higher grades includes not only drawing from objects, but also the application of the laws of perspective in drawing from memory and imagination simple objects in various positions as described orally by the teacher.

From the foregoing it will be seen that we do not cover as much ground as some cities. We are more nearly convinced, however, each year that it is better to do a few things reasonably well than to do more things indifferently. To speak fluently in the graphic language, much practical drill is absolutely necessary.

SPRINGFIELD, MASS.¹

"Art and Handwork."

GRADE I.

SEPTEMBER AND OCTOBER.

NOTE.—References to handwork are made in the larger type.

BLACKBOARD DRAWING.

Aim for free movement and large drawings.

Give all the children practice in drawing circles, straight lines in different positions, curves of force, and sedges or grasses in which the curve of force appears.

I A. Pupils may try making large drawings on long, narrow pieces of paper.

ILLUSTRATIVE DRAWING.

I B. Make simple backgrounds to represent sky and ground or floor and side wall, using flat, delicate tones. Cut and paste or draw the figures against this background to complete the illustration for some poem, story, scene, or sport.

I A. Using manila paper, make a simple picture to represent a fall day. The sky and ground may be represented in flat, delicate tones. Against this background draw a tree in its gay fall coloring and add one other accessory, such as a fence, wall, road, distant building, or trees.

Free cutting of objects or figures referred to in stories that have been read in class, and modeling in plasticine.

FOLIO.

One nature drawing from *I A.* One illustration. One free cutting, mounted.

We present to the teachers of the first grade a suggestive outline of work in drawing, color study, and illustration. Teachers are not obliged to follow closely the above suggestions, but are encouraged to work along original lines. The age and ability of the pupils will determine the amount of work that can be accomplished or even attempted.

NOVEMBER.

OBJECT DRAWING.

Aim for character and general proportions. Draw some of the simple fruits or vegetables that appear at the harvest season, or those that may grace the Thanksgiving table, such as the orange, lemon, apple, turnip, beet, or potato. Use colored crayons or colored chalks.

Modeling some of the fruits or vegetables from plasticine, and free cutting of the fruits or vegetables or objects associated with Pilgrim or Indian life, are suggested.

CONSTRUCTIVE DRAWING.

Practice measuring with the width of the ruler, and drawing parallel lines. Repeat the same exercises, and make a cover for a Thanksgiving souvenir. The inside leaves of the souvenir booklet may contain drawings or cuttings of the fruits or vegetables of the harvest season, or drawings or cuttings of the two types of early American homes—the wigwam and the log cabin.

ILLUSTRATIVE DRAWING.

Continue and develop the making of backgrounds for pictures with the pasting of figures and accessories to complete the illustration, or, better, draw the figures and accessories against the background to complete the illustration.

FOLIO.

One drawing of a single fruit, or one drawing of a single vegetable, made with chalk or colored crayons. One Thanksgiving souvenir booklet. One illustrative drawing. One free paper cutting mounted.

¹ C. Edward Newell, supervisor.

DECEMBER.

Aim for good simple construction and proper relation of parts. Review terms of position and relation, center, above, below, left, upper, lower, right, and corner.

Make some decoration for the Christmas tree, such as a lantern, star, chain, cornucopia, or box.

One simple box or cornucopia suitable for the season is to be constructed and properly decorated by each pupil. Make this box or cornucopia first from drawing paper, then repeat the construction, using the special paper furnished for the purpose. Begin this work immediately after Thanksgiving.

DESIGN.

Practice simple units of design, composed from straight lines, circular spots, and groups of lines. Use these units as decoration for the required piece of Christmas handwork. The units may also be used as decorations for other simple Christmas gifts, booklets, cards, or calendars.

ILLUSTRATIVE DRAWING.

Try an illustrative sketch, such as Santa Claus in some commonly imagined situation, the Christmas fireplace with stockings, the anticipated Christmas tree.

FOLIO.

One duplicate of each piece of constructive or applied design, finished during the month of December. One illustrative sketch.

JANUARY, FEBRUARY, AND MARCH.

PICTORIAL DRAWING.

Aim: Closer observation and clearer imagination of objects and conditions.

During January we will attempt to draw single objects; during February, groups of objects; and during March, living objects. All of these drawings will be done as single studies or as paper cuttings first, and then repeated in the illustrative drawing when picturing scenes from some story, rhyme, or poem. Relate all of this representation and pictorial drawing as closely as possible to the interests of the child.

Method: Select some story, such as the story of the Three Bears, Red Riding-hood, The Little Red Hen, Three Pigs, Old Woman and Her Pig. These stories may be used as oral language, for dramatization, drawing, and constructive work.

OBJECT DRAWING.

Make large simple drawings from single objects, furniture, or familiar household utensils that are mentioned in the selected story or stories, or that the children may imagine or suggest would be needed by the characters in the story. Use toys and actual objects as models from which to draw. Suggestive list: Basket, pail, teapot, cup, bowl, spoon, pitcher, kettle, stove, bed, chair, table, candlestick, door, window.

I B. Oilcloth mats and splints may be used as an introduction to weaving where class has not had kindergarten.

I A. Illustrate one of the reading stories by fitting up two cardboard boxes as rooms or scenes. The boxes will be supplied. The work involves free cutting for trees, characters, or animals; paper furniture making; plasticine modeling of dishes, etc.; decorations, and rug weaving on wood looms. Allow three months for this work.

A lesson in planning the color and the placing for the border of the rug should be given previous to the weaving.

GROUPED OBJECTS.

I A. Make simple drawings to illustrate the outside appearance of the home of the characters from some one of the selected stories. This illustrative sketch may include the sky and ground, the building and some accessory, such as a tree or trees, path, road, fence, or wall.

Suggestive list: Wooden, log, stone, or brick house, as the home of Golden Locks, The Three Bears, Red Riding-hood, the Grandmother, The Old Man Who Found the Coin.

The cabbage, straw, stick, or glass house that was built by the three pigs. The load of straw, sticks, or cabbage from which the three pigs built their homes. The home may be drawn as it would appear at various seasons of the year.

ANIMAL DRAWING.

Make simple drawings and free cuttings of wild or domestic animals, pets, birds, or fowls. Make these studies from the animals from pictures, or from memory after observing the animal or fowl.

ILLUSTRATIVE DRAWING.

Make illustrative sketches to picture some scene from a selected story. This illustration should include drawings of some of the objects that have been done as single studies and at least one character from the story. The sketch may represent the interior of a room or home.

FOLIO.

One drawing of a single object. One drawing of grouped objects. Two illustrative sketches. One drawing or cutting of an animal or fowl.

I B. Pupils who enter school in February can not be expected to take up the work planned for *I A*. These pupils should be given the blackboard drawing, such as that assigned for September and October, the making of simple backgrounds for illustrative drawing, and the sketching of single animals, fowls, or birds.

FOLIO.

One illustrative drawing. One drawing of an animal, fowl, or bird.

APRIL, MAY, AND JUNE.**NATURE DRAWING.**

I A. Aim: Character and growth. Make drawings in color of the flowers as they come. Draw flowers of bold character, such as the dandelion, daisy, buttercup, or tulip.

ILLUSTRATIVE DRAWING.

Make illustrative sketches suggested by such subjects as the Coming of Spring; Arbor Day; April Showers; Gardening; Memorial Day; Circus, or the Circus Parade.

COLOR STUDY.

I A. Teach the colors R, O, Y, G, B, V. Arrange a sheet showing these six colors that shall be beautiful and pleasing, though extremely simple.

DESIGN.

By drawing with the crayons on folded paper, compose units of design in successive steps, element by element. Use the term repeat, having the class copy first a border and then a surface repeat. After the pupils can produce a satisfactory result using the folded paper, have them use paper on which they have placed the centers for the units only. Repeat the same exercise, using the top or side view of some familiar spring flower as a unit of design.

Construct a simple folio from a single folded sheet of paper and decorate the cover with one of the line and spot units or one of the units suggested by a spring flower. The applied design for the folio may take the form of a border or a surface repeat. Note carefully the types of folios suggested at teachers' meetings and shown in the Manual Arts Exhibit. This folio should be designed for a special purpose—to hold the spring nature drawings. Plan the size of the nature drawings and the mounting of the same to fit the folio. The folio and nature drawings should be a complete and pleasing whole.

OPTIONS.

Make and decorate a simple paper napkin, mat, dolly, bookmark, or napkin ring, using an abstract or floral unit as a decoration.

FOLIO.

One design for a border, one design for a surface repeat. These may be either abstract or floral units. One complete folio. One other piece of applied design.

I B. Pupils in this grade should continue the illustrative drawing and free paper cutting. They may attempt some of the nature drawing and one very simple piece of applied design.

One illustrative drawing. One nature drawing. One piece of applied design.

GRADE II.**SEPTEMBER AND OCTOBER.**

NOTE.—References to handwork are made in the larger type.

BLACKBOARD DRAWING.

Aim for free movement and large drawings.

Give all the children practice in drawing circles, straight-lines in different positions, and curves of force

NATURE DRAWING.

Aim for growth and movement.

II A and B. Draw grasses, sedges, or rushes, using colored crayons.

II A. Trim one of the sheets to pleasing proportions or make one of the drawings within a frame of pleasing proportions.

COLOR STUDY.

II A and B. Review the six colors R, O, Y, G, B, V.

II A. Teach tints and shades. Arrange a sheet showing a full color, a tint, and a shade of the same. Make this a beautiful sheet, both in color and arrangement. Try toning sheets of paper with flat washes of very delicate tints of water color.

II A. Use these tinted papers as wall or floor coverings for the doll house to be furnished as a study of the modern home. Simple furnishings; not too many.

Electives: Weaving doll clothing and sample check patterns.

PRINTING.

II A. Practice the printing of single letters. Before the end of October each child should be able to creditably print the first letter of his last name. Have at least one nature drawing signed with this initial.

ILLUSTRATIVE DRAWING.

II A and B. Make pictures illustrating some fall scene or story. Keep the figures and accessories simple and draw them into the picture rather than trace or paste them.

FOLIO.

One nature drawing, unmounted. One mounted or framed nature drawing. One color study sheet. One illustration.

II B. Construction of shelters as described in the geographical reading, as Indian wigwam, of cloth and twigs; Eskimo igloo, of sand, clay, plasticine; Arabian tent, of cloth and sticks; palm trees; Chinese or Japanese house; Dutch house or windmill. These are to be done as group work in preparing fittings for the sand table. See "Constructive Work," teachers' reference library.

NOVEMBER.

OBJECT DRAWING.

Aim for character and general proportions.

Try some of the simple fruits or vegetables that appear at the harvest season, or those that may grace the Thanksgiving table, such as the banana, pear, orange, lemon, apple, turnip, beet, potato, or carrot. Use colored crayons or colored chalks. Try free cutting of the fruits or vegetables or objects associated with Pilgrim or Indian life.

II A. Pupils will devote part of November, December, and January to completing the furnishing of the doll house as a modern home.

II B. Pupils will continue the study and construction of some type of shelter referred to in the geographical reading.

Elective: Spool knitting as "seat work." Use for mitten cord, mop, or reins.

ILLUSTRATIVE DRAWING.

The illustrative sketch for this month may picture a Thanksgiving or harvest scene. The Pilgrims or the Indians, the Barnyard, the Mayflower at Anchor, the Home of an Early Settler, the First Thanksgiving, or some form of shelter with appropriate setting, about which the children have been reading.

FOLIO.

One drawing of a single fruit or one drawing of a single vegetable, using chalk or colored crayons. One illustrative sketch.

DECEMBER.

CONSTRUCTIVE DRAWING.

Aim for good simple construction and proper relation of parts.

Review terms of position and relations, upper, lower, center, corner, edge, end, horizontal, vertical, straight, curved, and angle. Make some decoration for the Christmas tree, such as the cornucopia or box.

One simple box or cornucopia suitable for the season is to be constructed and properly decorated by each pupil. Make this box or cornucopia first from drawing paper, then repeat the construction, using the special paper furnished for the purpose.

DESIGN.

Practice simple units of design, composed from straight lines, circular spots, or groups of lines, practice an evergreen-tree unit or one suggested by a spray of pine. Use these units as decorations for the required piece of constructive design. The units may also be used as decorations for other simple Christmas gifts, such as a card, folder, blotter, bookmark, or sachet packet.

PRINTING.

II A. Review the printing of simple letters, arrange and print a simple card suitable to accompany a gift.

ILLUSTRATIVE DRAWING.

Try an illustrative sketch such as Santa Claus in some commonly imagined situation, the Christmas fireplace with stockings, the anticipated Christmas tree, the night before Christmas, Christmas morning.

FOLIO.

One duplicate of each piece of constructive or applied design, finished during the month of December. One illustrative sketch, if the time has allowed of this work.

JANUARY, FEBRUARY, AND MARCH.

PICTORIAL DRAWING.

Aim: Closer observation and clearer imagination of objects and conditions.

During January we will attempt to draw single objects; during February groups of objects; and during March living objects, birds and animals as single studies and in the illustration of myths, legends, historical stories, or the study of shelters. Relate all the pictorial drawings as closely as possible to the study of geography and history.

OBJECT DRAWING.

First draw single objects and then repeat the drawing, giving a proper setting for the objects, either as a completed picture or an illustrated sketch. Use one or two figures in these groups or illustrative sketches. Select only one line of work and follow that out.

Group 1. (Suggested for *II A.*) Holiday experiences, sports, games, coasting, skating, the storm, building the snow man, shoveling out.

Group 2. (Suggested for *II B.*) Forms of shelter: Wigwam at edge of woods, wigwam by the sea, wigwam and campfire, early log shelter in a clearing, early log cabin in a clearing, the tree dwellers, the cave dwellers, Arab tent and oasis, igloo and people of cold country, a tropical home.

Group 3. (Suggested for *II A.*) Occupations: Select some day or days of the week and draw the household utensils used on that day. First make single studies, then grouped drawing or illustrative sketch in which a child or children are pictured as using the household utensils. This sketch may suggest the various activities that should take place in the several rooms of the doll house that we are furnishing as a modern home.

Group 4. (Suggested for *II B.*) Stories, myths, legends: Jack be Nimble; Rabbit and the Moon; Fox and the Grapes; Peter Rabbit.

FEBRUARY.

II B. Primitive shelters as suggested in history reading: Tree dwellers, mud hut, cave dwellers, tent, cabin.

Elective: Spool work for seat work. Use as cord for mittens, mop, or reins.

II A. Pupils will devote part of the time each month this half year to the furnishing of the doll house as a modern home. Do not crowd too much furniture into each room. In this lesson some practice in printing with wooden pegs may be done.

Electives as in September *II A.*

ANIMAL DRAWING.

The animal drawing must be taken at such a time as seems best to the room teacher—either when studying some animal as science work or as review of this work, or as the drawing of a certain animal may be needed to complete some illustrative sketch. Make drawings of wild or domestic animals or pets, either from the animal itself or from pictures. Select some one bird, animal, or fowl, study it carefully, and make drawings. This drawing may be used in some consistent manner, as an Easter souvenir.

PAPER CUTTING.

Free cutting of single animals, objects, and groups of animals and objects may vary the work of object drawing and illustration.

FOLIO.

One single drawing or one paper cutting of a single object. One drawing or paper cutting of a single animal. Two grouped drawings of objects or animals or two illustrative drawings.

APRIL, MAY, AND JUNE.

NATURE DRAWING.

Aim for character and growth.

Make drawings in color of the flowers as they come. Draw flowers of bold character, such as the daffodil, daisy, buttercup, or tulip.

ILLUSTRATIVE DRAWING.

Make illustrative sketches suggested by such subjects as Spring in the Country, Spring in the City, Flowering, Gardening, Arbor Day, the Hen and Her Family, Memorial Day, the Circus Parade, the Circus, Our Picnic.

COLOR STUDY.

Review the colors R, O, Y, G, B, V, full color, tint, and shade. Try tinting large sheets of paper with flat, delicate washes of water color.

Use these tinted papers for printing units of design as borders or surface repeats, by means of wooden pegs; or use the papers for drawing units of design arranged as borders or surface repeats, using colored crayons. (Some of the tinted papers may be used for making nature drawings or for mounting drawings.)

DESIGN.

Teach the terms repeat, balance, and unit, using wooden pegs and making prints from them. Teach the terms first with reference to border, and then with reference to a surface design. Pupils may be allowed to use the wooden pegs in occupation work, copying, or designing new units. The peg prints may also be used in decorating and arranging the number papers.

APPLICATION OF DESIGN.

II A. In this section the study of design should be directed toward the furnishing of the doll house, wall papers, draperies, mattings, and rugs.

Some of the borders or surface designs may be used as wall or floor coverings. These may be wooden peg prints or designs drawn in crayon on tinted papers.

II B. In this section pupils may prepare for a May or June festival. Select such articles as may be made within the time allowed for this work. The following is the list of articles appropriate for such a festival: A basket in which to carry a lunch and bring home flowers, a paper napkin and ring, and a paper dolly on which to spread the lunch. The napkin ring may be made first, having a unit of design applied as a border. The tissue paper napkin may be made second, having a unit applied as a border, and modified to fit the corners of the napkin. The paper dolly may come next. Use drawing paper and give careful attention to the placing of the corner units. The paper crown may follow with a unit arranged in the form of a border, the crown being made adjustable to the head size. The paper basket may be made and pasted last. The unit of design should be placed in carefully selected spots. The same unit should be used on all of these objects. The unit may be made from wooden peg prints or may have been suggested by the top or side view of some spring flower drawn with colored crayons. Attempt such part of this work as may be done within the assigned time.

FOLIO.

One design for a border. One design for a surface repeat. These may be done with wooden peg prints or may be floral units drawn with colored crayons.

II A. Duplicates of all designs used in furnishing the doll house.

II B. Duplicate designs of all festival furnishing.

GRADE III.**SEPTEMBER AND OCTOBER.**

NOTE.—References to handwork are made in the larger type.

BLACKBOARD DRAWING.

Aim for free movement and large drawings.

Give all the children practice in drawing large circles, straight lines in different positions, reverse curves, and curves of force.

NATURE DRAWING.

Aim for growth and movement. Draw grasses, sedges, rushes, or brilliantly colored seed packs, using colored crayons. Give special attention to the working of one color over another.

In October make one of these nature drawings on delicately tinted paper or make one of the nature drawings as a pleasing arrangement within a circular or rectangular frame. Sign this drawing with one initial properly placed.

COLOR STUDY.

Review the six colors, R, O, Y, G, B, V, tints, shades, and teach the term hue. Teach one color family. (A full color and its two hues.) Try tinting sheets of paper with flat washes of water color. These washes should be of some delicate hue selected from the nature specimen that is to be represented upon them.

III A. Plan the placing, color, and width of the border of the 5 by 7 inch rug. Use one color and one of its hues.

Make a 5 by 7 inch rug with border.

III B. Weave a holder, plain color, 5 by 5 inches.

Elective work: Doll clothing in a mixed class. Textile samples of plaids in A and B.

PRINTING.

Practice printing of single letters. Pupil should sign one of the nature drawings by printing and properly placing the first letter of his last name.

ILLUSTRATIVE DRAWING.

Sketches of seasonable subjects, stories, scenes, or sports, as the time may allow for this work.

FOLIO.

One mounted nature drawing. One nature drawing framed or on tinted paper. One free cutting, mounted. One illustration, if attempted.

NOVEMBER.

OBJECT DRAWING.

Aim for character and general proportions.

Draw some of the fruits or vegetables that appear at the harvest season or those that may grace the Thanksgiving table; orange, lemon, apple, banana, pear, radish, turnip, beet, cucumber, carrot, or potato. Use colored crayons or colored chalks. Try free cutting of the fruits or vegetables or objects associated with early Pilgrim life or the Indians.

CONSTRUCTIVE DRAWING.

III B. Teach or review the use of the ruler, drawing long lines to connect given points, 1 inch and $\frac{1}{2}$ inch measure. If the time will allow, use the ruler in constructing a Thanksgiving souvenir of not over four pages. The inside leaves of the souvenir booklet may contain drawings, cuttings, or written work to illustrate the story of the Pilgrims, the early American settlers, or the first Thanksgiving.

III A. Practice drawing lines $\frac{1}{2}$ inch apart and setting off points $\frac{1}{2}$ inch apart on given lines. Make an application of the $\frac{1}{2}$ -inch measuring in the construction of the loom. Construct a loom for 5 by 7 inch rug where needed.

ILLUSTRATIVE DRAWING.

The illustrative sketch for this month may picture a Thanksgiving or harvest scene, Pilgrim or Indian life, the first Thanksgiving dinner, the colonial kitchen.

FOLIO.

One drawing of a single fruit or one drawing of a single vegetable made with chalk, water color, or colored crayons. One Thanksgiving souvenir booklet. One illustrative sketch.

DECEMBER.

Aim for strong, simple construction, and proper relation of parts. For Christmas work make a lantern, box, or cornucopia.

Teach or review terms of position or relation, upper, lower, center, corner, edge, end, horizontal, vertical, oblique, straight, curved, angle, right angle, diagonal, and diameter. Make some decoration for the Christmas tree, such as box, cornucopia, or lantern.

Make the object first from drawing paper, then repeat the work, using the special paper furnished for the purpose.

DESIGN.

Practice simple units of design composed from straight and curved lines, circular and rectangular spots and groups of lines, or practice a unit suggested by an evergreen tree, candle, or spray of pine. Use these units as decorations for the required piece of constructive design. The units may also be used as decoration for other simple Christmas gifts, such as a card, folder, blotter, bookmark, or sachet packet.

PRINTING.

(This work is optional and can only be done where other work is not crowding.)

Review the printing of simple letters. Arrange and print a simple card suitable to accompany a gift.

ILLUSTRATIVE DRAWING.

The illustrative sketch for this month may picture Santa Claus in some commonly imagined situation, the Christmas fireplace, stockings hung for Santa, the anticipated Christmas tree, the shop windows at Christmas time, or a street scene, or gathering Christmas greens.

FOLIO.

One duplicate of each piece of constructive or applied design finished during the month of December. One illustrative sketch.

JANUARY, FEBRUARY, AND MARCH.

OBJECT DRAWING.

Aim: Closer observation and clearer imagination of objects and conditions.

During January we will attempt to draw single objects, during February groups of objects, and during March living objects, birds, animals, or fowls.

Make large simple drawings from Christmas toys, familiar household utensils, or means of conveyance. Use objects or toys as models whenever possible, or draw from memory after observing the objects.

Suggestive list: Toys, sled, shovel, lantern, hatchet, ax, hammer; means of conveyance: automobile, electric car, hack, wheelbarrow, express car, balloon, jinrikisha, Chinese junk, push cart, snowplow, sled.

Grouped objects: Make sketches to illustrate some winter scene, sport, effect of wind, rain, or snow. A means of conveyance with proper setting, a story, myth, or legend. Free paper cutting may vary the work in object drawing.

III B. Weaving of a holder, plain color, 5 by 5 inches. Elective work: Doll clothing in a mixed class. Textile samples of plaids in A and B.

III A. Weaving of rug with a unit of design in color, woven or darned in. The design to be suggested by some story in the reading. These rugs may be planned to be sewed together, arranging the design as a border or central group. The design for this work will be considered at any time when the teacher thinks the class ready to execute it.

ANIMAL DRAWING.

Make simple drawings and free cuttings of wild or domestic animals, pets, birds, or fowls. Make these studies from the animals, from pictures, or from memory after observing and studying the animal or fowl.

FOLIO.

One drawing or cutting of single object. One drawing or cutting of a single animal or bird. One drawing or cutting showing grouped objects in an illustrative sketch.

APRIL, MAY, AND JUNE.

NATURE DRAWING.

Aim for character, growth, and the manipulation of one color over another.

Make drawings in color of the flowers as they come. Draw some flowers of bold character and some of delicate growth.

ILLUSTRATIVE DRAWING.

Make illustrative sketches to suggest the coming of spring in the city, the coming of spring in the country, Arbor Day, plowing, gardening, Memorial Day, circus parade, or the circus.

COLOR STUDY.

Review the colors, R, O, Y, G, B, V, tint, shade, and hue. Make a color family of one color and two hues, if not done in October. Make this sheet a pleasing and beautiful one. Try tinting large sheets of paper with flat, delicate washes of water color. Use these tinted papers for printing units of design as borders or surface repeats, by means of the wooden pegs; or use the tinted papers for drawing units of design arranged as borders or surface repeats, using colored crayons. Some of the tinted papers may be used for making nature drawings, or for mounting drawings.

DESIGN.

Teach the terms repeat, radiate, balance, and unit, using wooden pegs, and making prints from them. Teach the terms first with reference to a border, and then with reference to a surface design. Pupils may be allowed to use the wooden pegs in occupation work, practicing or designing new units.

A simple folio to hold the nature drawings or some other school work is required in this grade. Plan the folio and its contents to make a complete and pleasing whole. Use 1-inch and $\frac{1}{2}$ -inch measures in constructing the folio from one piece of folded paper, and the printing of some word such as May, June, Spring, or Nature. The units of design may be made from wooden peg prints or from the side or top view of flowers drawn with colored crayons. When practicable, place the units against a background which is a delicate hue of the color used for the unit. Note carefully the types of folios suggested at teachers' meetings and shown in the Manual Arts Exhibit. Pupils in this grade may make the group of objects suggested under preparations for a festival in Grade II B, using more complicated units of design than those used in Grade II B, or pupils may make and decorate a circular dolly with carefully fringed edges. The unit of design for the dolly may be either made from wooden peg prints or from floral elements suggested by some spring flower, berry, or seed. Only one piece of applied design is required, aside from the rug in III A.

FOLIO.

One design for a border and one design for a surface repeat. These may be either wooden peg prints or units suggested by the top or side view of spring flowers. One complete folio. One circular dolly, or one set of festival fittings, if these pieces of applied design can be made during the time allowed.

GRADE IV.

SEPTEMBER AND OCTOBER.

NOTE.—References to handwork are made in the larger type.

NATURE DRAWING.

Aim for vigorous growth and character.

Plenty of serious practice in proper handling of the brush will aid materially in forming good habits and producing satisfactory results. First work with brush and ink. When proper handling of the brush is gained, use water color. Use clean color and paint directly from the palette. Gray paper for all ink work, and manila, white, or tinted paper for painting.

Draw the milkweed, bush clover, narrow-dock seed stalks, large rose hips, poppy seed stalks, mullein stalks, grasses, sedges, rushes, goldenrod, plantain stalks, marigold, rattle box, oats, linden seed, or smartweed.

IV B. Ink drawings or color paintings without tinted backgrounds.

IV A. Monochrome drawings or color paintings against a tinted background.

COLOR STUDY.

Review the six colors, R, O, Y, G, B, V, tints, shades, and hues.

IV A. Try laying flat washes of water color of delicate tones against which to paint nature studies.

PRINTING.

Practice printing one letter (preferably an initial) within a small rectangle. Use one of these printed letters in signing one of the nature drawings.

FOLIO.

Two mounted nature drawings in ink or monochrome. One mounted nature drawing in color signed with one printed initial. This painting may have a delicately tinted background. No crayon drawings, all brush work.

IV A and B. Kite. To be made of tinted paper, on two reeds, butterfly or insect shape. Tinted paper will be supplied.

An elective may be arranged to substitute for the kite.

Elective Work: Cord work; concrete work, such as making bricks for fireplace or for building; plaster work, molded or modeled; making of cardboard looms.

Fittings for the sand table to illustrate geography, to be done as group work: Arab tent and palm trees, colonial fireplace of concrete bricks, first meeting house or log house, Chinese junk or barrow. (See "Constructive Work," teachers' reference library.)

NOVEMBER AND DECEMBER.

In this grade the work from nature or objects should give place to constructive drawing, before the end of November, that the children may have ample time for completing their constructive design before Christmas. Aim for accurate work and proper relation of elements.

Prepare designs for the kites as soon as these are completed. Insect or grotesque motifs suggested by Japanese or Chinese prints may be used. Execute these designs in black on the tinted paper.

OBJECT DRAWING.

Make silhouette drawings with brush and ink from the turnip, beet, carrot, or radish (whole plant pruned). Draw a single potato, beet, or carrot, of erratic shape, using the lead pencil. In all pencil work, have the pencil held lightly and a few inches from the point. In *IV B*, silhouette drawings may be made with brush and ink on gray paper. In *IV A*, drawings may be made in monochrome against a tinted background that is related to the drawing in value and in hue. Do not confuse mediums. Select one medium only, either brush and color or pencil, and direct the efforts of the class toward the successful handling of the medium chosen. Sign the drawings with one initial, well placed.

CONSTRUCTIVE DRAWING.

Review the use of the ruler and teach the use of the compasses, measuring 1 inch, $\frac{1}{2}$ inch, and $\frac{1}{4}$ inch. Teach or review the terms horizontal, vertical, oblique, angle, right angle, center, corner, edge, diagonal, diameter, radius, circumference, triangle, square, rectangle, circle.

From an 8-inch square of paper construct a scent packet. Draw a 4-inch square in the center of the 8-inch sheet. Draw diameters of the 8-inch square. Draw a 4-inch semicircle, 2-inch radius, so as to form a quatrefoil. Cut this out, fold, and take in the last semicircle. Apply some simple decoration to the sachet or scent packet, to be used as a Christmas gift.

One scent packet, cornucopia, or box is to be constructed and properly decorated by each pupil. Make this box or cornucopia first from drawing paper, then repeat the construction, using the special paper furnished for the purpose.

DESIGN.

Practice simple units of design composed from straight and curved lines, circular and rectangular spots, groups of lines, or practice a unit suggested by an evergreen tree, candle, or spray of pine. Use one of these units as a decoration for one of the required pieces of constructive design.

PRINTING.

Continue to practice printing whenever the time will allow. Arrange, print, and mount a simple card of Christmas or New Year's greetings.

FOLIO.

One ink drawing of a vegetable, or one monochrome drawing of a vegetable, or one pencil drawing of a vegetable. One example of each piece of constructive design finished for the holiday season.

JANUARY AND FEBRUARY.

Aim: Character and general proportions.

PICTORIAL DRAWING.

Make an illustrated booklet or packet on "Silhouettes." Explain the meaning of the name "silhouette" to the children and tell something of the history of this kind of representation. Show a few good illustrations and encourage the pupils to collect examples of silhouettes and to explain what their examples were used for as originals—advertising, portraits, ornament, design, illustration. Teachers who are to promote their classes should confer with the teacher who is to receive the class, and decide upon a plan of work that shall as far as possible avoid a decided change or break in the work.

Make the silhouette drawings of objects of striking form and proportions. Use brush and ink, or brush and color, or free paper cutting. First draw from shadows, then from silhouettes of objects, from imagination or memory.

Make a very simple folio from one sheet of folded paper to hold the drawings or bind them into a simple booklet. Plan every sheet to fit the folder or booklet. IV A. Arrange and print an appropriate title, properly placed. The result should be a consistent and pleasing folio or booklet. The drawings may illustrate some features of a trade; occupation, manufacture, geography, or history. Choose only one line and flow that to completion.

SUGGESTIONS.

Select only one of these suggestions:

The manufacture of brushes—single drawings of brushes of all kinds and for all purposes.

Foot coverings—silhouette drawings of shoes of people of various countries.

The carpenter—tools of various kinds.

Lumberman—utensils, clothing, and general equipment used in this occupation.

China—the desert, the cold country.

Objects or figures in costume referred to in the geographical or historical reading.

In place of the study of silhouettes, this time may be devoted to constructive work. Objects referred to in the historical or geographical reading.

Elective work: Concrete work, making bricks for fireplace or building; plaster work, molded or modeled; cardboard loom; cord work; textiles, samples of cheviots.

MARCH.

For this month there will be two lines of work suggested. The teacher or the class may select the one they will follow. Do not attempt both.

1. Paint single Japanese lanterns of related or contrasting color. Make a decorative treatment of two or three lanterns arranged against a delicately tinted background. This decorative treatment may take the form of a cover for language or geography work on Japan or China.

2. Study carefully the growth of local trees, trunk and lower branches. Select one or two kinds of trees for study and make careful drawings of them, using brush and ink.

Paint simple landscapes to represent different seasons of the year, localities, time of day, or condition of the weather. Try representing hills, a mountain, a lake, or a river. In all of these paintings practically three values should be used. Use one or two trees as part of these landscape compositions.

Block printing from clay, blotting paper, news board, or other substitute.

In one lesson the design appropriate for the Easter surprise may be planned. Use the most satisfactory designs of the class from which to prepare blocks. Prints for the class will be made from the three or four chosen designs. (See "Constructive Work," teachers' reference library.)

FOLIO.

One complete folio or booklet on "Silhouettes" if this work is taken. One painting of a lantern and one arrangement of lanterns. Or one painting of a single tree, and one landscape composition. One Easter surprise with the block-print design.

APRIL, MAY, AND JUNE.

NATURE DRAWING.

Aim for vigorous growth and character.

Make drawings in color of spring flowers and growths. Sign the nature paintings with one printed initial placed near the stem. The initial should be of proportions to harmonize with the drawing and paper.

COLOR STUDY.

Review color terms—six colors, R, O, Y, G, B, V, full color, tint, shade, hue, value. Make a special study of values with reference to the neutral scale and a scale of values (not intensive) of one color. Have pupils use water colors and paint a scale of three tones of either neutral values or values of one color, giving special attention to the painting of flat tones and even intervals of value. These are not to be finished papers.

IV B. Make three tracings on gray paper from a rosette pattern of good proportions, 2½-inch size. Rosette patterns may be furnished to the pupils. Color these three tracings in three related values of water color, subdued, not intense colors. Paint the washes over and outside the outlines of the rosettes. Cut them out and mount them on 4 by 12-inch gray paper, 1-inch top margin, ½ inch between rosettes. The result should be a beautiful scale of three related values of one color, signed with one initial properly placed and in harmony with the proportions of the sheet.

IV A. On gray or manila paper trace one 2½-inch rosette, draw one 3 inches square and one 3½ inches square. Use clear, firm lines. Tint these figures with flat washes of water color, using beautiful subdued tones of three related values. Paint over and outside the outlines. The larger square should be of the darkest value, the smaller square of the middle or the lightest value, the rosette of the lightest or middle value but of a different value from the smaller square. Cut these figures out and mount them on 6 by 7 inch gray paper, first the large square, the small square on top of this, then the rosette on top of all. The result should be a rosette with two concentric squares rendered in three related values of one color. Sign the sheet with one well-placed initial in harmony with the proportions of the paper.

DESIGN.

Make a more thorough study of the composition of a rosette and teach the terms repeat, radiate, balance, unit. Design rosettes that are suggested by the top view of flowers. Avoid radial designs with weak centers.

Plan and construct a simple folio of good proportions to hold the spring nature painting or other school papers. These folios may have an application of a rosette motif used as a cover design, or any other appropriate unit of design. Render the designs in two or three values of one color. The IV A folios may have a well-arranged and printed title.

FOLIO.

A and B. One painting of spring flowers or growths; one folio cover for nature work, history, geography, or writing; one design for a rosette, 2½-inch white paper mounted on 8½-inch gray paper.

IV B. One scale of three related values of one color (three rosettes mounted and properly signed).

IV A. One scale of three related values of one color (rosette and two concentric squares properly signed).

GRADE V.

SEPTEMBER AND OCTOBER.

NOTE.—References to handwork are made in the larger type.

NATURE DRAWING.

Aim for vigorous growth and character.

Plenty of serious handling of the brush will aid materially in forming good habits and producing satisfactory results. First work with brush and monochrome or ink. When proper handling of the brush is gained, use water color. Use clean color and paint directly from the palette. Gray paper for all ink work, and manila, white, or tinted paper for painting.

Draw the milkweed, bush clover, narrow-dock seed stalk, large rose hips, poppy seed stalks, mullein stalks, grasses, sedges, rushes, salvia, goldenrod, plantain stalk, marigold, rattle box, oats, linden seeds, or smartweed.

V B. First paint with ink or monochrome, then use color with a tinted background.

V A. First use monochrome, then monochrome or water color with tinted background. Paint two sprays in rhythm against a delicately tinted background.

V B. Try pencil sketches of single leaves to show the character, curling of the edges, and feeding of the leaf.

V A. Try sketches of leaves in two or three foreshortened positions. Use pencil or brush and color.

Boys will make wood looms 4½ by 6 inches for the first grade. Cardboard work will follow, as, V B, spelling book, Christmas box; V A, Christmas box.

COLOR STUDY.

Review the six colors, R, O, Y, G, B, V, tints, shades, and hues. Lay flat washes of water color within rectangles drawn for nature studies. Teach the term value.

MEASURING.

Review the use of the ruler, 1½ inch, and draw rectangles of various proportions in which to draw or paint nature studies.

PRINTING.

Practice printing single letters (preferably an initial) within a rectangle, and use one of these printed initials with which to sign nature drawings.

FOLIO.

One mounted nature drawing in ink or monochrome. One mounted or framed nature drawing in color. These drawings may be of a single spray or two sprays in rhythm. The drawings should be properly signed with a printed initial.

NOVEMBER AND DECEMBER.

In this grade, the work from objects should give place to constructive drawing before the end of November, that the children may have ample time for completing their constructive design before Christmas. Aim for accurate work and proper relation of elements.

OBJECT DRAWING.

Make drawings with brush and color from single vegetables of erratic form (whole plant pruned), such as the beet, turnip, carrot, or radish; or draw single or grouped vegetables, using the lead pencil. Select either brush and color or pencil as a medium and direct the efforts of the class toward the successful handling of the medium chosen. In V B, the brush drawings should be made in monochrome wash against a tinted background that is related to the drawing in value and in hue. In V A, the brush drawings may be made in water color wash, aiming for beauty and richness of color and pleasing arrangement of the sheet. Sign all drawings with one initial properly placed.

CONSTRUCTIVE DRAWING.

Review the use of the ruler and the compasses, measuring 1 inch, $\frac{1}{2}$ inch, and $\frac{3}{4}$ inch. Teach or review the terms, horizontal, vertical, oblique, angle, right angle, diameter, diagonal, arc, radius, circumference, triangle, square, rectangle, circle, ellipse, oval, pentagon, hexagon. Construct a star. Using $2\frac{1}{2}$ -inch radius, describe a circle. Set off a radius of $2\frac{1}{2}$ inches on the circumference of the circle, dividing it into five equal parts. Connect every other point with a straight line to form a star, using the ruler and pencil.

Boys are to construct boxes of the types suggested in the manual arts exhibit. Boys are required to supply boxes for themselves and for the girls. For V B, a square or triangular box will be suggested. For V A, a pentagonal or hexagonal box will be suggested.

DESIGN.

Practice units of design suitable as decorations for the Christmas boxes. These units may be suggested by the holly, pine with cone, star, candle, or evergreen tree. Use one of these units as a decoration for one of the required pieces of Christmas constructive work.

PRINTING.

Continue to practice printing whenever time will allow. If the time will allow, arrange, print, and mount a simple card of Christmas or New Year's greeting.

FOLIO.

One monochrome drawing of a vegetable, or one water-color drawing of a vegetable, or one pencil drawing of single or grouped vegetables. One example of each piece of constructive design finished for the holiday season.

JANUARY AND FEBRUARY.

PICTORIAL DRAWING.

Aim: Character, proportion, and relation of parts.

Explain the difference between the three types of representation—silhouette, vignette, and a complete picture. Lead the class to see the three elements that go to make up a complete picture. In a complete picture the three elements, object, ground, and background, are always present. By the end of January, pupils of this grade should know beyond a doubt that distance does two things for objects: It decreases the apparent size, and it changes the apparent level of objects in a picture. Select either group 1 or 2 for study.

V B. Boys make match strike in January. No decoration.

OBJECT DRAWING.

Group 1. Teach what is given under pictorial drawing. Make pencil drawings of single spherical or hemispherical objects, giving careful attention to the proportions, placing of shelf line, and inclosing frame. Simple foreshortening of the circle may be considered. Grouped objects: Repeat the pencil drawing of the single object and add some other appropriate object to make a pleasing group. The final drawing may be a complete picture of one or two objects, well arranged with reference to the ground, background, inclosing frame or mount, and initial signature. This drawing may be finished in lead pencil or related values in water color.

Suggestive list: Fig basket with oranges; football and baseball; school globe; paste jar and brush; large and small vegetables of erratic forms; dry measure with vegetables; closed umbrella standing against the wall; wooden chopping bowl with fruit or vegetables.

Group 2. Teach what is given under pictorial drawing.

Paint single Japanese lanterns of pleasing form, proportions, and coloring. Sign these paintings with an initial properly placed and printed. Make a decorative arrangement of two or three lanterns. This arrangement should show some knowledge of the foreshortening of the circle. The paper may be designed as a cover for language work on China or Japan.

V B. Boys in February: Cardboard work, as, spelling book, match strike, decorated.

Electives: Notebook, cardcase, postal album.

MARCH.

For this month there will be two lines of work suggested, teacher or pupils may select the line they wish to follow. Do not attempt both.

Group 1. Study and draw some animal, fish, fowl, or bird in action and in some characteristic attitude. From this drawing work out an amusing figure for a weather vane. From the class work select one or two figures. Cut the templet for the figure from $5\frac{1}{2}$ by 10 inch paper. Design the letters for the arms of the vane, N, S, E, from 3 by 3 inch papers and the W from 3 by $3\frac{1}{2}$ inch paper. Make simple, stout letters. The four most satisfactory designs will be used for all the letters cut from the metal.

Boys V A. Classes following group 1, will make weather vanes with wood upright and cross arms and letters and animal of "taggers" iron.

Classes following group 2 take cardboard work, as memorandum card or phone card and sketch book, to be decorated.

Electives: Magazine cover, scrap basket, cardcase.

Group 2. Study carefully the growth of local trees, trunk and lower branches. Select one or two kinds of trees for study and make careful drawings of them, using brush and ink. Paint simple landscapes to represent different seasons of the year, localities, time of day, or condition of the weather. Try representing hills, a mountain, a lake or river, clouds, or seacoast. In these paintings practically three values should be used. Use one or two trees as part of the landscape composition.

FOLIO.

One pencil drawing of a single object; one composition in pencil or wash of single or grouped objects; or one painting of a single lantern and one arrangement of lanterns. One painting of a single tree and one landscape composition; or one design for a weather vane and one design for the letters E, W, N, S.

APRIL, MAY, AND JUNE.

NATURE DRAWING.

V A and B. As the time may allow make drawings in color of spring flowers and growths. Sign the paintings with one well-printed initial in harmony with the shape of the paper and placed to balance the whole.

DESIGN.

V B. Review the construction of a rosette and teach the terms, radiate, balance, unit, repeat, growth while designing a rosette or other radial form that may have been suggested by the top view of a flower or a fruit section.

Boys have been constructing a match strike. Girls have been fringing a doily. Prepare rosettes that may be used for the match strike and doily. The design for the match strike must be contained within a $2\frac{1}{2}$ -inch square, the design for the doily within a $7\frac{1}{2}$ -inch square, 7-inch design. Trace the designs upon the objects but do not paint them until after the study of color is completed and pupils have had all possible practice in using the brush.

COLOR STUDY.

V B. Review color terms, six colors, full color, tint, shade, hue, and value. Make a special study of values of color either in relation to the neutral scale or a scale of values of one color. Do not confuse values and intensities. Paint either a neutral scale of three related values or a scale of three values of one color of reduced intensity. Paint these tones on gray or manila paper, cut out the tablets of uniform size and mount them. Sign the scale with an initial. Size for tablets, $\frac{3}{4}$ inch by $2\frac{1}{2}$ inches on a mount 6 by $4\frac{1}{2}$ inches. Trace designs like those to be used on the match strike and doily and practice painting them to gain power of technique before painting the match strike and doily.

DESIGN.

V A. Boys have been constructing sketch books for the use of the class in VI B. These books are to be decorated with prints made from a potato stamp, using a unit of design suggested by some tree of characteristic form. From one lesson in design enough units can be selected from the class to decorate all the sketch books. Cut a $1\frac{1}{2}$ -inch strip of paper from the 9-inch edge of a 9 by 6 inch sheet. Fold and cut one $4\frac{1}{2}$ inches square from the large piece of paper. Fold this square on one diameter and from it design, by cutting a unit suggested by some tree, retaining the original height and width of the paper square. Fold and cut $1\frac{1}{2}$ -inch squares from the $1\frac{1}{2}$ -inch strip of paper. Fold these squares on one diameter and from them design units as the large one was done. Carefully keep the $1\frac{1}{2}$ -inch square in its original height and width. The units of design may be printed on the books as borders, cover groups, or surface repeats for the end papers.

Girls have been hemming or hemstitching doilies. Prepare designs for these doilies, placing the interest in the corners or the center of each side. The designs may be worked out on $\frac{1}{2}$ -inch squared paper. Both boys and girls may take this lesson in design, but only the girls will apply the designs to the doilies. The work may be carried on in a cooperative manner, the boys assisting the girls to cut the stencils and apply the designs. Stencils will be cut from the more satisfactory designs and these used for the girls' doilies. Use a color tone of related hue and value to that of the doily.

COLOR STUDY.

V A. Teach the color terms as given for *V B.* Paint a neutral scale of five related values or a scale of five related values (not intensive) of one color. Use beautiful, subdued color. Teach the term harmony—agreement while making the scale. Paint flat tones on drawing paper, cut the tablets of uniform size and mount them. Sign the scale with an initial properly placed and printed. Tablets $\frac{1}{2}$ inch by $2\frac{1}{2}$ inches, $\frac{1}{4}$ -inch space between tones, 5 by 12 inch mounting paper.

FOLIO.

V B. One painting of spring flowers, if time allows for this work; one scale of three related values; one design for match strike; one design for fringed dolly.

V A. One painting of flowers; one scale of five related values; one design for sketch book; one design for dolly.

HANDWORK FOR BOYS.

V B. September. Make wooden looms, $4\frac{1}{2}$ by 6 inches, for Grade I.

Cardboard work: Spelling book; Christmas box, square or triangular; match strike, 4 by 7 inches, not decorated.

V B. February. Make spelling book; match strike, $3\frac{1}{2}$ by 7 inches, to be decorated.

Elective work: Notebook, cardcase, postal album.

V A. September. Make wooden looms, $4\frac{1}{2}$ by 6 inches, for Grade I; Christmas box, hexagonal or pentagonal; memorandum card or telephone call card.

V A. February. Make memorandum or telephone card; sketch book, to be decorated.

Electives: Magazine cover, scrap basket, cardcase, weather vane.

GRADE VI.

SEPTEMBER AND OCTOBER.

NOTE.—References to handwork are made in the larger type.

NATURE DRAWING.

Study local trees, aiming for their general massing and characteristic growth.

Show the pupils how to use the sketch book constructed in *V A.* Take the class out of doors and have them sketch in lead pencil from some local tree of characteristic growth. Make only one sketch on a page. From the studies made in the sketch book, have drawings worked up in the classroom, using brush and ink or monochrome. For each room there will be furnished one set of drawings of trees. Use these drawings and sketches for reference help.

Make pencil sketches of single leaves or sprays of leaves in foreshortened positions. In pencil drawing, hold the pencil lightly and a few inches from the point. No erasing should be allowed.

FOLIO.

One sheet of pencil sketches of foreshortened leaves. One ink silhouette drawing of a local tree. One silhouette drawing of a local tree done in monochrome wash. In *VI A* this monochrome drawing may be made against a delicately tinted background.

NOVEMBER AND DECEMBER.

VI B. Aims: Rapid and accurate thinking, in three dimensions. Skill in handling simple drawing instruments. Balance of parts or elements (in lettering).

CONSTRUCTIVE DRAWING.

Review or teach the terms, horizontal, vertical, oblique, circle, circumference, diameter, diagonal, arc, radius, perpendicular, triangle, right angle, rectangle, square, semicircle, hexagon, square, prism, cube, cylinder, and cone. Explain the use of the drawing kit (drawing board, T square, and triangles). Demonstrate how a sheet of paper may be placed on the drawing board, fastened and used. Try a practice sheet of horizontal, vertical, and oblique lines, using the drawing kit. Explain the elements of a working drawing, and have a simple freehand drawing made at the blackboard. Make a working drawing of a simple wooden box, using the drawing kit. Make a development of the surface of the box. Give careful attention to the arrangement of the drawing on the sheet, and the lettering of the same.

DESIGN.

Practice the grouping of letters to form words. Practice the lettering required to complete the working drawing and letter the working drawing of the box. Arrange and letter a simple motto or card of greeting. This card should have one simple well-designed initial or capital letter. Give careful attention to the balance of the initial or ornamental letter, and the mass of the general text on the card.

FOLIO.

One working drawing of a box. One example of freehand lettering of a motto or card of greeting.

DESIGN.

VI A. Pupils will devote the month of November to the preparation of the designs for the objects that are to be made in the manual training classes. The boys will prepare designs for the cover of a notebook or cardcase to be made from leather. The girls will prepare designs for a needlebook or cardcase to be made from linen, or the girls may prepare designs to be executed in outline embroidery for the cooking apron. The unit should not be over 6 inches in size and may be placed in the corner of the apron. Avoid repeating same measure as in the width of the hem.

Boys: The front cover of the notebook is to be 5 by 2½ inches. Decide upon the necessary margins, the area for the design, where the interest may be placed, then develop the design. Send the design to the manual training shops as tracings. The complete set for the room should be inclosed in an envelope marked with the school, grade, and room, and addressed to the manual training teacher not later than the last week in November.

Girls: Linen will be furnished 5½ by 10½ inches, to be hemmed ½ inch on all sides. After lining the linen, a 2-inch pocket is to be turned in at each end of the 9½ by 4½ inch piece of work, leaving an outside area for decoration 5½ by 4½ inches, which is folded on the 4½-inch diameter. Decide upon the necessary margins the area for the design, where the interest may be placed, and develop the design, which will be finished in outline embroidery. Carefully trace the designs upon the linen, using carbon paper. Mark each piece of linen with a paper, giving the girl's name and room, and send this work to the sewing teacher not later than the last week in November.

PRINTING.

Practice the grouping of letters to form words. Arrange and letter a simple motto or card of greeting. This card should have one simple well-designed initial or capital letter. Give careful attention to the balance of the initial or ornamental letter and the general mass of the text on the card.

FOLIO.

One design for a leather notebook. One design for a linen needlebook, or one design for a cooking apron, done in pencil outlines. One example of freehand lettering.

JANUARY AND FEBRUARY.

Aims: Critical observation of objects. Skill in representing the beauty of simple forms.

GENERAL DIRECTIONS.

One paper is sufficient for any one lesson. Keep to one paper till some one point is accomplished. Draw the same object more than once. Failures or poor drawings are sometimes the result because pupils can not see the objects that serve as models. Have several duplicate objects so placed that every pupil can see at least one object readily. Avoid the eraser as the enemy of good habits in drawing. Hold the pencil lightly and a few inches from the point. Make large drawings, well placed on the paper. Teach each lesson in successive steps and have one step well accomplished before another is given. Independence in drawing will come after good habits have been insisted upon and so formed.

STUDY OF SINGLE OBJECTS.

Give all the pupils practice in drawing horizontal ellipses, vertical and horizontal lines. By means of hemispherical objects, circles of cardboard, hoops, wire cylinders, or diagrams on the board, teach what the term foreshortening means. First lead the children to see foreshortening in circles, then to represent it, then to determine the amount of foreshortening and to make their drawings accordingly.

Study or review the drawing of single hemispherical objects, illustrating the effects of foreshortening and changes in level of circles and concentric circles.

Make careful, well-studied pencil drawings of single hemispherical or conical objects, such as the earthen preserving kettle, wash basin, wooden chopping bowl, tin or glass funnel, ordinary earthen bowl, plain glass finger bowl, tin dipper, or agate basin.

COMPOSITION.

When pupils can successfully draw a hemispherical object or conical object, let them try a simple group of not more than two or three objects, such as a wooden chopping bowl, with potatoes; white or yellow cooking bowl filled with apples, or with one apple near it; agate or tin saucepan with one or two beets or onions near it; a bean pot without a cover; tin dipper with two carrots near it; tin funnel and a bowl; glass bowl with two oranges or lemons near it. Give careful attention to the grouping of the objects, placing and arranging on the paper, apparent level of the objects and foreshortening of circles and concentric circles.

FOLIO.

One pencil drawing of a single hemispherical or conical object. One pencil drawing of a group of spherical and hemispherical objects. One sheet of collected illustrations of foreshortening of the circle.

MARCH, APRIL, MAY, AND JUNE.

VI B. **Aims:** Rapid and accurate thinking, in three dimensions. Skill in handling simple drawing instruments. Balance of parts or elements (in lettering).

CONSTRUCTIVE DRAWING.

Review or teach the terms horizontal, vertical, oblique, circle, circumference, diameter, diagonal, arc, radius, triangle, rectangle, square, semicircle, hexagon, square, prism, cube, cylinder, and cone. Explain

the use of the drawing kit (drawing board, T square, and triangles). Demonstrate how a sheet of paper may be placed on the drawing board, fastened, and used. Try a practice sheet of horizontal, oblique, and vertical lines, using the drawing kit. Explain the elements of a working drawing and have a simple freehand drawing made at the blackboard. Make a working drawing of a simple wooden box, using the drawing kit. Make a development of the surface of the box. Give careful attention to the arrangement of the drawing on the sheet and the lettering of the same.

COLOR STUDY.

Review or teach color terms. Make a special study of complementary colors. Terms: Scale, value, neutral, intensities, hues, color families, intermediates, tone, complements. Make a neutral scale of three values with the white and black tones: White, light gray, middle gray, dark gray, and black. The tones for this scale may be cut out and mounted or painted within rectangles that have been carefully drawn. Any two colors which when mixed produce neutral gray are said to be complementary. Roughly, the complementary pairs are red and green, orange and blue, yellow and violet, but only certain hues of red, are complementary to certain hues of green. Let the pupils ascertain by experiment a pair of complementary colors. It seems wise to limit our experiments to ascertain complementary colors to the red and green or orange and blue groups (orange—G. B. or red—B. G.). Paint spots of the two colors and the resulting neutral gray upon paper. Cut them out carefully, mount them, signing the paper with one initial properly placed. Prepare one or two groups of two harmonious complementary colors that shall agree in value, hue, and intensity. Cut these out and carefully mount them, signing the paper with one initial properly placed. Make paintings in color of large spring flowers as these flowers are available for study. When possible select flowers in which there is a group of complementary colors.

FOLIO.

One working drawing of the box properly lettered. One neutral scale. One group of complementary colors with the resulting neutral gray. One group of complementary colors which are harmonious. One nature painting.

DESIGN.

VI A. Pupils will devote this month to the preparation of the designs for the objects that are to be made in the manual training classes. Boys will prepare designs for the cover of a notebook or cardcase to be made from leather. The girls will prepare designs for a needlebook or cardcase to be made from linen, or the girls may prepare designs for the cooking apron. These designs will be finished in outline embroidery. The area for the unit should not be over 6 inches square.

Boys. The front cover of the notebook is to be 5 by 2½ inches. Decide upon the necessary margins, the area for the design, where the interest may be placed, then develop the design. Send the designs to the manual training shops as tracings. The complete set for the room should be inclosed in an envelope marked with the school, grade, room, and addressed to the manual training teacher not later than the first week in April.

Girls. Linen will be furnished 5½ by 10½ inches to be hemmed ½ inch on all sides. After lining the linen a 2-inch pocket is to be turned in at each end of the 9½ by 4½ inch piece of work, leaving an outside area for decoration 5½ by 4½ inches, which is folded on the 4½-inch diameter. Decide upon the necessary margins, the area for the design, where the interest may be placed, and develop the design which will be finished in outline embroidery. Carefully trace the designs upon the linen, using carbon paper. Mark each piece of linen with a paper, giving the girl's name and room, and send this work to the sewing teacher not later than the first week in April.

COLOR STUDY.

Review or teach color terms, making a special study of complementary colors. Terms: Scale, value, neutral, intensities, hues, color families, intermediates, tone, complements. Make a neutral scale of three values with the white and black tones: White, light gray, middle gray, dark gray, and black. The tones for this scale may be cut out and mounted or painted within rectangles that have been carefully drawn. Any two colors which when mixed produce gray are said to be complementary. Roughly, the complementary pairs are red and green, orange and blue, yellow and violet, but only certain hues of red are complementary to certain hues of green. Let the pupils ascertain by experiment a pair of complementary colors. It seems wise to limit our experiments to ascertain complements to the red and green or orange and blue groups (orange—G. B.) or (red—B. G.). Paint spots of the two colors and the resulting neutral gray on paper. Cut them out, carefully mount them, signing the paper with one initial properly placed. Make paintings in color of large spring flowers as these flowers are available for study. When possible select flowers in which there is a group of complementary colors.

FOLIO.

One design finished in pencil for the needlebook, cardcase, or apron. One design finished in pencil for the notebook or cardcase. One neutral scale. One group of complementary colors with the resulting neutral gray. One group of harmonious complementary colors. One nature painting.

MANUAL TRAINING.

VI B.

Study of derrick.—Boom, breast. Compare with traveling cranes. Compare with trolley conveyor.

Uses of derrick.—Transportation, building operations.

Functions of parts.

Making of wooden parts.—Mast, boom.

NOTE.—Simply plane to smooth the faces. Omit gauging.

Mechanical parts.

Mechanical principles.—Tension, compression, the lever, the pulley, the drum. Use simple apparatus to illustrate.

Making of metal parts.—Hinge, bracket, pulley.

Have careful patterns made before laying out on the metal.

NOTE.—Avoid long talks. Ten minutes is enough for one time. Begin work with as few preliminaries as possible and carefully plan for the best time to bring in the various topics.

VI A.

Leather work in correlation with the art department.

1. Bookmark, given designs.

2. Watch fob, given designs.

3. Notebook cover. Individual designs prepared in the art department.

NOTE.—In the fall the designs are to be ready by Thanksgiving. In the spring they are to be ready the first week in April.

Where time permits, follow the leather work with the study of house framing. Divide the class into two groups and build two frames.

GRADE VII.

SEPTEMBER AND OCTOBER.

NOTE.—References to handwork are made in the larger type.

NATURE DRAWING.

Study local trees, aiming for their general massing and characteristic growth. Draw these trees with brush and ink, monochrome, water color, or with lead pencil. Take the class out of doors to sketch from local trees as often as possible. If the first studies of trees are made in ink or monochrome, follow these with studies of the tree done in water-color wash to represent the rich fall coloring of the tree.

If the pencil is selected as a medium, give careful attention to the study of the sketches of trees furnished each room. Make finished drawings of local trees that are worked up in the class-room from pencil sketches made from the actual trees.

Make pencil sketches of single leaves or sprays of leaves in foreshortened positions. In pencil drawing, hold the pencil lightly and a few inches from the point. No erasing should be allowed.

FOLIO.

One pencil sketch of a spray of leaves in foreshortened positions. One pencil sketch of a local tree or one water-color study of a local tree.

NOVEMBER AND DECEMBER.

VII B. Aims: Rapid and accurate thinking in three dimensions. Skill in handling simple drawing instruments. Balance of parts or elements (in lettering).

CONSTRUCTIVE DRAWING.

Review or teach the terms horizontal, vertical, oblique, circle, diameter, diagonal, arc, radius, perpendicular, triangle, right angle, rectangle, square, semicircle, hexagon, pentagon, square prism, cube, cone, hexagonal and triangular prisms, and square pyramid. Explain the use of the drawing kit (drawing board, T square, and triangles). Demonstrate how a sheet of paper may be placed on the drawing board, fastened, and used. Explain the difference between a working drawing and a pictorial drawing. Have the pupils make careful working drawings of the magazine rack, to be made by the pupils in the manual training shops. When properly lettered and finished send the boys' working drawings to the manual training shops. Inclose the drawings in an envelope addressed to the manual training teacher.

DESIGN.

Select either Option 1 or 2.

Option 1.—Have the following problem in geometry carefully worked out using the drawing kit, ruler, and compasses. In the center of a 9 by 12 inch sheet of paper draw a $5\frac{1}{2}$ -inch circle, $2\frac{1}{4}$ -inch radius. Inside this circle inscribe a regular pentagon. See "Construction work," teachers' reference library. Apply a simple and appropriate design as a decoration for the scent packet and use this as a Christmas gift.

Option 2.—Practice the grouping of letters to form words. Arrange and letter a simple motto or card of greeting. Design an initial or capital letter for the card. Give special attention to the balance and relation of the large letter and text of the card.

FOLIO.

One pentagonal scent packet or one festival card. One working drawing of the bookrack.

DESIGN.

VII A. Boys will prepare designs for the ends of the magazine rack, now under construction in the manual-training shops. Confine the design to the long edge of the rack, avoiding the end grain. Refer to the working drawing for the size of the end of the rack. Send these designs to the manual-training shops not later than the 1st of December. Templates should be sent in complete sets, placed in an envelope marked with the school, grade, room from which sent, and properly addressed to the manual-training teacher. Girls will prepare designs for the cookery-book covers. Surface for the design, $4\frac{1}{2}$ by 10 inches. Pupils are not expected to save duplicate designs.

CONSTRUCTION.

For the construction of the cookery-book covers, each girl will need the following materials: Two pieces newsboard 10 by 5 inches; 2 pieces 10 by 1 inch; 2 pieces binding tape 11 inches long; 2 pieces binding cloth 12 by 3 inches; 2 pieces $9\frac{1}{2}$ by 2 inches; 2 pieces cover paper 12 by $5\frac{1}{2}$ inches; 2 pieces drawing paper $4\frac{1}{2}$ by $9\frac{1}{2}$ inches.

To one 10-inch edge of one of the 10 by 5 inch pieces of board fasten one of the 10 by 1 inch strips by means of binding tape, leaving one-fourth inch separation between the two boards. Turn in the ends of the tape and paste them flat. Paste one of the 12 by 3 inch pieces of binding cloth to cover the 10 by 1 inch board, letting the cloth run over onto the 10 by 5 inch board three-fourths of an inch. Clip corners, fold and paste long edge to inside of 1-inch board, then fold and paste ends inside. Paste $9\frac{1}{2}$ by 2 inch binding cloth on inside of 1 by 10 inch board, letting cloth run over onto 10 by 5 inch board three-fourths inch. Draw a line on first piece of binding cloth one-fourth inch from the binding over the 10 by 5 inch board. Cover this board with paste, also one long edge of one piece of 12 by $5\frac{1}{2}$ inch cover paper and paste this paper to cover the board, one long edge corresponding to the line just drawn, opposite long edge and two ends projecting over edges of board three-fourths inch. Clip corners, fold three-fourths inch long edge, then three-fourths-inch ends inside, and paste. Rub all surfaces perfectly smooth. Paste $9\frac{1}{2}$ by $4\frac{1}{2}$ inch drawing paper to finish inside of book one-fourth inch from edge and ends. Punch binding holes through 1 by 10 inch board $1\frac{1}{8}$ inches from ends, first measuring with one piece of cookery note paper.

While the girls are making the cookery-book covers, the boys may be working out the plan for the pentagonal scent packet suggested for VII B. From these patterns the boys may cut and fold scent packets enough to supply the class, using tinted construction paper. Teachers in VII A sections may be allowed the rest of this half year to finish this work if necessary.

FOLIO.

Two pentagonal scent packets. Duplicate designs for the magazine rack and cookery book can not be made and saved in the time at our disposal.

JANUARY AND FEBRUARY.

Aims: Critical observation of objects. Skill in representing the beauty of simple forms.

GENERAL DIRECTIONS.

One paper is sufficient for any one lesson. Keep to one paper till some one point is accomplished. Draw the same object more than once. Failures or poor drawings sometimes result because pupils can not see the objects that serve as models. Have several duplicate objects so placed that every pupil can at least see one object readily. Avoid the eraser as the worst enemy of good habits in drawing. Hold the pencil lightly and a few inches from the point. Make large drawings, well placed on the paper. Teach each lesson in successive steps, and have one step well accomplished before another is given. Independence in drawing will come after good habits have been insisted upon and so formed.

STUDY OF SINGLE OBJECTS.

Give all the pupils practice in drawing horizontal ellipses, vertical and horizontal lines. By means of hemispherical objects, circles of cardboard, hoops, wire cylinders, or diagrams on the board teach what the term foreshortening means. First lead the children to see foreshortening in circles, then to represent it, then to determine the amount of foreshortening and to make their drawings accordingly.

Study or review the drawing of single cylindrical and conical objects, illustrating the effects of foreshortening and changes in level of circles and concentric circles.

Make careful well-studied pencil drawings of single cylindrical, hemispherical, or conical objects, such as a glass tumbler, earthen mug, water pail, wooden butterbox, dry measure, earthen pitcher, agate or tin saucepan, earthen crock, earthen bean pot, agate basin, tin dipper, earthen bottle, or battery jar.

COMPOSITION.

When pupils can successfully draw a single hemispherical, cylindrical, or conical object, let them try a simple group of not over two or three objects, such as a saucepan with beets; butterbox with potatoes; dry measure filled with potatoes and one or two lying near; saucepan and large mug; tumbler and two lemons; bean pot and earthen mug; glass preserving jar and cup; tin dipper or agate basin and potatoes; battery jar and oranges.

Give careful attention to the grouping of the objects, placing and arrangement on the paper, apparent level of the objects and foreshortening of circles and concentric circles, and the initial signature.

FOLIO.

One accented pencil drawing of a single hemispherical, cylindrical, or conical object. One accented pencil drawing of a simple group of hemispherical, cylindrical, or conical objects.

MARCH, APRIL, MAY, AND JUNE.

VII B. Aims: Rapid and accurate thinking in three dimensions. Skill in handling simple drawing instruments. Balance of parts or elements (in lettering).

CONSTRUCTIVE DRAWING.

Review or teach the terms horizontal, vertical, oblique, circle, circumference, diameter, diagonal, arc, radius, perpendicular, triangle, right angle, rectangle, square, semicircle, hexagon, pentagon, square prism, cube, cylinder, cone, hexagonal and triangular prisms, and square pyramid. Explain the use of the draw kit (drawing board, T square, and triangles). Demonstrate how a sheet of paper may be placed on the drawing board, fastened, and used. Explain the difference between a working drawing and a pictorial drawing. Have the pupils make careful working drawings of the magazine rack to be made by the boys in the manual-training shops. When properly lettered and finished, send the boys' working drawings to the manual-training shops, not later than the 15th of April. Inclose the drawings in an envelope, on which is written the name of the school, grade, and room, the envelope to be addressed to the manual-training teacher.

COLOR STUDY.

Review or teach color terms. Make a special study of analogous tones of color. Make a neutral scale of four values: High light, light, middle dark, gray, and black. Mount this scale on gray paper and print one initial. Make an analogous scale of three related and harmonious tones of reduced intensities. Mount these scales on gray paper and print one initial. If they prefer, pupils in this section may work out a pentagonal scent packet, based on the 5½-inch circle, cut duplicates from tinted paper and apply a simple appropriate design to be painted in analogous coloring, in place of making the analogous scales. (See "Constructive Work," teachers' reference library.)

FOLIO.

One working drawing of the magazine rack, properly lettered. One neutral scale properly lettered and mounted. One group of three harmonious analogous tones, or one scent packet made on tinted paper with a design rendered in analogous harmony.

DESIGN.

VI A. Boys will prepare designs for the ends of the magazine rack, now under construction in the manual-training shops. Confine the design to the long edge of the rack, avoiding the end grain. Refer to the working drawing for size of the end of the rack. Send these designs to the manual-training shops not later than the first week in April. Templets should be sent in complete sets, placed in an envelope, marked with the school, grade, and room from which sent, and properly addressed to the manual-training teacher. Girls will prepare designs for the cookery-book covers. Surface for the design, 4½ by 10 inches. Pupils are expected to save duplicate designs.

CONSTRUCTION.

For the construction of the cookery-book cover, each girl will need the following materials: Two pieces newsboard 10 by 5 inches, 2 pieces 10 inches by 1 inch; 2 pieces binding tape 11 inches long; 2 pieces binding cloth 12 by 3 inches, 2 pieces 9½ by 2 inches; 2 pieces cover paper 12 by 5½ inches; 2 pieces drawing paper 4½ by 9½ inches.

To one 10-inch edge of one of the 10 by 5 inch pieces of board fasten one of the 10 by 1 inch strips by means of binding tape, leaving one-fourth inch separation between the two boards. Turn in ends of tape and paste them flat. Paste one of the 12 by 3 inch pieces of binding cloth to cover the 10 by 1 inch board, letting the cloth run over onto the 10 by 5 inch board three-fourths inch. Clip corners, fold, and paste long edge to inside of 1-inch board, then fold and paste ends inside. Paste 9½ by 2 inch binding cloth on inside of 1 by 10 inch board, letting cloth run over onto 10 by 5 inch board three-fourths inch. Draw a line on first piece of binding cloth one-fourth inch from the binding over the 10 by 5 inch board. Cover this board with paste, also one long edge of one piece of 12 by 5½ inch cover paper, and paste this paper to cover the board, one long edge corresponding to line just drawn, opposite long edge and two ends projecting over edges of board three-fourths inch. Clip corners, fold three-fourths inch long edge, then three-fourths inch ends inside and paste. Rub all surfaces perfectly smooth. Paste 9½ by 4½ inch drawing paper to finish inside of book, one-fourth inch from edge and ends. Punch binding holes through 1 by 10 inch board 1½ inches from ends, first measuring with one piece of note paper.

While the girls are constructing the cookery-book covers, the boys may be preparing papers for the painting of the neutral and analogous scales called for under the heading of color study. Trace the designs upon the cookery-book covers, but do not paint the designs until after subject of color has been reviewed and the scales or analogous groups of harmonious colors have been completed.

COLOR STUDY.

Review or teach color terms. Make a special study of analogous tones of color. Make a neutral scale of four values: High light, light, middle dark, gray, and black. Mount this scale on gray paper and print one initial. Make an analogous scale of three related and harmonious tones of reduced intensities. Mount these scales on gray paper and print one initial.

Paint the designs that have been traced upon the cookery-book covers in a related analogous tone of about middle value. Boys cut a templet from white paper like the design prepared for the end of the magazine rack. Mount the design on gray paper. Print magazine-rack design and initials on the mounting paper. Girls make a complete duplicate design in lead pencil on white paper of the one used on the cookery-book cover. Print cookery-book design and initials on the gray mounting paper.

FOLIO.

One design for the magazine rack, mounted. One design for cookery-book cover, mounted. One neutral scale. One group of three harmonious analogous tones.

MANUAL TRAINING.

VII B.

Introductory work such as coat and hat rack, if desirable.

Bridge study—Arrange for stereopticon talk on bridges.

Types of bridges.

Elements in bridge construction—Compression members, tension members.

Make wood parts—Careful planing, use of gauge, scoring, miter cuts in boxes.

Make metal parts—Bolts and nuts. Thread cutting. Plates.

Tests of truss or bridge.

Importance of bridges.

The truss in architecture—Visit the school garrets.

Concrete piers for the bridges—Make wood mold and cast.

VII A.

Introductory piece, if desirable.

One piece involving designs, such as the magazine rack.

Working drawing will be made in the art department by each boy of the VII B grade.

All parts are made ready in full dimensions. The parts to be modified are then shaped according to the individual designs produced in the art department.

If time allows, one of the following projects may be selected: Group bridge. Water motor (individual). Concrete piece, as fern dish.

GRADE VIII.

SEPTEMBER AND OCTOBER.

NOTE.—References to handwork are made in the larger type.

NATURE DRAWING.

Aims: Expression of beauty, charm of growth, grace of line and harmony or brilliancy of coloring.

Make careful drawings from flower or fruit sprays, using lead pencil or water color. Select some plant for study and devote every effort toward mastering it and learning to express its characteristics with pencil or with color. Every sheet should show genuine study.

VIII A. Trace the designs on the metal for execution in the shops if so requested by the shop teachers.

FOLIO.

One sheet of pencil sketches of details from some nature spray. One accented drawing in pencil of a flower or fruit spray. One nature drawing in water color of a flower or fruit spray selected for beauty of coloring.

NOVEMBER AND DECEMBER.

VIII B. **Aims:** Rapid and accurate thinking in three dimensions. Skill in handling simple drawing instruments. Balance of parts or elements (in lettering).

CONSTRUCTIVE DRAWING.

Review or teach the terms, horizontal, vertical, oblique, circle, circumference, diameter, diagonal, arc, radius, perpendicular, triangle, right angle, rectangle, square, semicircle, hexagon, square prism, cube,

cylinder, cone, hexagonal and triangular prisms, square pyramid, pentagon, square, hexagonal and circular plinths, and frustums of the cone and square pyramid.

Explain the use of the drawing kit (drawing board, T square, and triangles). Demonstrate how a sheet of paper may be placed on the drawing board, fastened, and used. Explain the difference between a working drawing and a pictorial drawing. Make a careful working drawing from the composing stick, or some other appropriate object or piece of apparatus made and used by the pupils in the school work; or work out the set of geometry problems furnished grade VIII.

DESIGN.

Carefully letter the working drawing with name of the object and pupil's initials. Arrange and letter a festival card, using a greeting, motto, or appropriate quotation. This work should include the design of at least one initial or illuminated letter. Give special attention to the balance and unity of the whole arrangement.

FOLIO.

One working drawing or set of geometry problems. Two arrangements of lettering.

DESIGN.

VIII A. The design for both boys and girls is to take the form of an illustration for some piece of eighth-grade literature. The designs are to be worked out by the boys in etched process on zinc plates in the manual training shops. Prints will be made from these plates and sent to the studios. These designs are to be printed with color ink on tinted paper. The selection of the ink and paper is to be made in the studio before the designs are printed in the shops. Time and equipment will not allow of the etching, mounting, and printing of all of the designs. From the class work the most satisfactory designs will be selected, plates etched from these designs, and prints made. These prints will be returned to the studio and distributed so that each pupil may have one print of the piece of literature for which he attempted to make an illustration. These designs should be ready to go to the shop about Thanksgiving time. The prints are to be returned to the studio from the shops before the close of this half year.

Arrange and letter a festival card, using a motto, greeting, or appropriate quotation. This card should have at least one well-designed initial or illuminated letter. Give careful attention to the balance and arrangement of the whole card.

FOLIO.

One design for the illustration of eighth-grade literature. One print from plates etched in the shop. One arrangement of free-hand lettering for a festival card.

JANUARY AND FEBRUARY.

Aims: Observation and appreciation of simple beauty in common objects. Power to truthfully record observations of form.

GENERAL DIRECTIONS.

One paper is sufficient for any one lesson. Keep to one paper till some one point is accomplished. Draw the same object more than once. Failures or poor drawings sometimes result because pupils can not see the objects that serve as models. Have several duplicate objects so placed that every pupil can at least see one object readily. Avoid the eraser as the worst enemy of good habits in drawing. Hold the pencil lightly and a few inches from the point. Make large drawings, well placed on the paper. Teach each lesson in successive steps and have one step well accomplished before another is given. Independence in drawing will come after good habits have been insisted upon and so formed.

STUDY OF SINGLE OBJECTS.

Give all the pupils practice in drawing horizontal ellipses, vertical and horizontal lines. By means of hemispherical objects, circles of cardboard, hoops, wire cylinders, or diagrams on the board, teach what the term foreshortening means. First lead the children to see foreshortening in circles, then to represent it, then to determine the amount of foreshortening and to make their drawings accordingly.

Study or review the drawing of single cylindrical and conical objects, illustrating the effects of foreshortening and changes in level of circles and concentric circles.

Make careful, well studied pencil drawings of single cylindrical, hemispherical or conical objects, such as a glass tumbler, earthen mug, water pail, wooden butter box, dry measure, earthen pitcher, agate or tin saucepan, earthen cooky crock, earthen bean pot, agate basin, tin dipper, or earthen bottle, simple vase forms, teapot, Japanese bowls, coffee pot, cup and liquid measures.

Give careful attention to the grouping of the objects, placing and arrangement on the paper, apparent level of the objects and foreshortening of circles and concentric circles; also give careful attention to the placing and correct drawing of the handles, rings, and other accessories. Use all the helps possible, e. g., invisible edges, axes, and diagonals.

COMPOSITION.

When the pupils can successfully draw a single hemispherical, cylindrical, or conical object, let them try a simple group of two or three objects, such as a saucepan with beets; butter box with potatoes; dry measure filled with potatoes and one or two lying near; saucepan and large mug; tumbler and two lemons; bean pot and earthen mug; glass preserving jar and cup; tin dipper or agate basin and potatoes; Japanese vase and bowl; earthen mug and small bowl; glass preserve jar and bowl; or milk can with a cup.

Review or practice shading with broad parallel lines, to give an even tone. Try this shading on one of the drawings of a single object; accent the drawing.

Make a careful drawing from a single beautiful object, such as a Japanese bowl or vase. Cut this drawing out, trace it on a tinted paper that approximates in color one of the tones of the object, and color the drawing with crayons and lead pencil on the tinted paper to suggest the tones of the vase or bowl. Grade VIII A pupils may consider the elements of convergence.

FOLIO.

One accented pencil drawing of a single hemispherical, cylindrical, spherical, or conical object with a handle, ring, or other accessory properly placed and drawn. One accented pencil drawing of a group of two objects. One shaded pencil drawing of a single object, or one colored drawing of a single object or group of objects drawn on tinted paper and suggesting the color of the objects.

MARCH, APRIL, MAY, AND JUNE.

DESIGN.

VIII B. Boys will prepare designs for a square or rectangular metal tray, blotter corners, book ends, stationery holders, or paper knife. The design for the tray is to be for the edge of the rectangle. The other designs may be for etched surfaces. Girls will prepare designs for a sewing problem to be finished in solid and outline embroidery. Designs may be for an opera bag, belt, or pincushion.

Girls are to trace their designs upon the linen by means of carbon paper. Each girl is to mark her work with name, school, and room, and the work will be kept in complete sets by the drawing teacher until next September, when the work will be delivered to the sewing teacher, the designs embroidered, and the parts assembled in the VIII A sewing classes.

Boys are to finish their designs in pencil outlines, surfaces to be etched and carefully filled in with a gray pencil tone or cross-hatch lines. These designs should be on paper of the exact size of the tray, knife, corner, or holder. Boys are to mark their designs with name, school, and room number. The designs should be kept in complete sets by the drawing teacher until next September, when the work may be delivered to the shop teachers.

COLOR STUDY.

Review or teach color terms and harmonies. Select some one color harmony—neutral, complementary or analogous—for a special study. Trace the designs furnished you, and render them in two or three related harmonious tones of reduced intensity. On tracing paper make a rendering of the girls' designs showing where the light and dark values are to be placed.

FOLIO.

One design for the boys' work. One design for the girls' work. One design rendered in each color harmony studied.

DESIGN.

VIII A. Design for the boys and girls may take the form of illustrations and decorations for a simple booklet, folder, or card. The designs are to be worked out by the boys in etched process on zinc plates in the manual training shops. Prints will be made from these plates and sent to the studios, where the color may be applied if needed to enhance the beauty of the designs. It is impossible for each design to be worked out in the shop. The best designs will be etched and plates made from them and returned to the studios to supply each pupil with at least one piece of creditable work. Color may be added to the prints in the studio and the leaves may be bound into the booklet. Select some piece of English of lasting worth and appropriate literature for this grade. Using this as a subject, design an appropriate illustration (landscape composition) to accompany the text. The landscape compositions should be ready the second week in April.

Color study will be the same as VIII B March, April, May, and June.

Pupils in this section are privileged to construct and decorate a desk blotter if conditions are not quite favorable for the consideration of the design for the card, folder, or booklet.

CONSTRUCTION.

For the construction of the blotter pupils will need the following materials:

Three or four pieces of news board $12\frac{1}{2}$ by 10 inches; 2 pieces of cover paper $2\frac{1}{2}$ by 12 inches; 2 pieces of cover paper $2\frac{1}{2}$ by 9 inches; 4 pieces cover paper 5 by 6 inches; 1 piece drawing paper 9 by 12 inches; 1 piece drawing paper $8\frac{1}{2}$ by 11 inches; 1 piece blotting paper $9\frac{1}{2}$ by 12 inches.

News board will be furnished $12\frac{1}{2}$ by 10 inches. Cover paper 9 by 12 inches. Save all scraps of colored paper for trial of color.

Paste the pieces of news board together and press them. Bind the $12\frac{1}{2}$ -inch edges with $2\frac{1}{2}$ -inch strips of cover paper to run over on to the news board equally on each side. Bind the two 10-inch edges of the news board with $2\frac{1}{2}$ -inch strips of cover paper. Rule a line $\frac{1}{2}$ inch or $\frac{3}{4}$ inch from one long edge of the 5 by 6 inch cover papers, fold on this line and paste it flat. Fold and paste these 5 by 6 inch papers across the corners of the news board, making a triangular covering on the face side, two edges of which are to be 3 inches long. Fold and paste the ends firmly to the back of the news board. Paste the 9 by 12 inch drawing paper to finish the back of the blotter, and the $8\frac{1}{2}$ by 11 inch drawing paper to finish the front. Slip the piece of blotting paper into position, one corner under each of the corner straps.

Trace the design upon the blotter corners and finish as the one on practice paper was painted.

FOLIO.

One design for the blotter corner or one design for the card, folder, or booklet. One complete print from the designs for the card, folder, or booklet. One design in each color harmony studied.

MANUAL TRAINING.

VIII B.

THE TELEGRAPH.

Demonstration of its parts.—Importance of the telegraph.—History of its invention.—Making of the base; emphasis on the precision necessary in making instruments. Use drawings and sketches.—Principle of the electromagnet.—Magnetism as related to soft iron, steel, and other common metals.—Making of metal parts for key. Laying out on metal to be carefully executed. Systematic use of drawings and sketches necessary.—The code, Morse or Continental, preferably the Morse. Each boy should have the code on a card. From this stage of the work on, five minutes each lesson should be given to listening and sending.—Making metal parts for the sounder. Assembling, finishing.

NOTE.—Make full use of metal equipment furnished by the vocational school. Protect the benches by using the bench plates and vise anvils.

VIII A.

PRINTING.

Distributing.—All the boys distribute type at the same time. Two boys are assigned to each case, and they are to be responsible for work done. Show use of galley and stick to avoid "pl." If all work has been distributed, give some "pl" taken from his own case to each boy.

Setting type.—Boy's name and address for a card. Lock as many as possible in one form. Print something for school work, as headings or titles for arithmetic, grammar, spelling, etc., or envelopes. Set up a calendar and print for IX B design work.

Etching.—Initial letter. Trace initials from type, take a proof, catalog of old Post Roman, and have each boy etch his own initial and mount it for printing. By this time the designs should be ready for the final project of printing a selection of the regular English work, with an etched illustration. Each boy is to etch. If his drawing is not worth while, let him take a girl's design or trace one. Do not etch a poor design.

If an initial letter is to be used, set up the type and confer with the art teacher in choosing the proper size and style for the initial.

Keep in close touch with the drawing teacher in your school and show her the process of etching, so as to inform her about the kind of designs that are workable. Do not have the designs rushed.

VIII A.—September class. Prepare the metal for the object designed in the art classes last spring.

Etch or finish the design as soon as traced upon the metal and take up the printing.

NOTE.—The etching of the illustrations should be carried out without delay when the designs are prepared. In the fall term the designs are due at Thanksgiving and in the spring term the second week in April.

A full set of prints should be supplied to the studio in each case that designs are supplied.

See instructions given to the studios referring to printing in the drawing outline.

GRADE IX.

SEPTEMBER AND OCTOBER.

NOTE.—References to handwork are made in the larger type.

NATURE DRAWING.

Aims: Expression of beauty, charm of growth, grace of line, accuracy of expression, brilliancy or harmony of color.

Make careful drawings from flower or fruit sprays, using lead pencil or water color. Select some one plant for study and devote every effort toward mastering it and learning to express its characteristics with pencil or with water color. Every sheet should show genuine study.

FOLIO.

One sheet of pencil sketches of details from some nature spray. One accented or accented and shaded pencil drawing of a fruit or flower spray. Or one nature drawing in water color of a fruit or flower spray selected for beauty of coloring. These drawings to be carefully and appropriately mounted.

NOVEMBER AND DECEMBER.

DESIGN.

IX B. One lesson in picture framing should be given before the Christmas recess. In this lesson the boys are to establish the proper width of the frame for the picture they are to frame during their A section in the manual training shop. The drawing teacher should supervise the selection of the picture.

Option 1. Pupils of this grade may make a folding writing tablet and decorate the same. It will be necessary to have the decorative designs for these tablets made first in order to allow time for the wood blocks to be made and the covers to be printed from them. Arrange the decorative designs within $4\frac{1}{2}$ by $8\frac{1}{2}$ inches rectangles. The design is to be made a competitive problem and is to be finished as a pencil tracing to be ready for inspection and selection the last of November. Word blocks may be cut in the shops or studios.

Each pupil will need the following materials: News board, two pieces $10\frac{1}{2}$ by $6\frac{1}{2}$ inches. Cover paper (A), one piece $6\frac{1}{2}$ by $9\frac{1}{2}$ inches; four pieces (B) $1\frac{1}{2}$ by $2\frac{1}{2}$ inches; one piece (C) 7 by $11\frac{1}{2}$ inches; one piece 4 by 7

inches; one piece (D) 6 by 8 inches; one piece (E) 6½ by 8 inches; one piece (F) 6 by 10 inches. Binding cloth, one piece 2½ by 11½ inches; one piece 2½ by 9½ inches. Blotting paper, one piece 6 by 9½ inches. Fasten the two news boards together by means of the longest piece of binding cloth. Leave a one-half inch space between the two long edges of the boards and let the cloth paste on to the boards 1 inch. Fold and paste the three-fourths inch projecting ends inside. Paste the shorter piece of cloth to finish the inside of the binding. Paste paper 4 by 7 inches to cover the upper part of the back cover, covering a space 6½ by 3½ inches and coming within one-half inch of the binding. This paper will project three-fourths of an inch at the top and end of the cover. Clip the free corner and fold and paste the three-fourths inch projecting edges over on to the outside of the cover. On the two long edges of (D) and one short edge draw lines three-fourths of an inch from the edges of the sheet. Fold and paste one of these long edges flat. Fold and paste the others to make a pocket for envelopes. Paste this pocket 2½ inches from the upper edge of the cover. Fold and paste the free end to the outside of the cover. Fold this over cardboard to prevent the pocket from being too thin to receive the envelopes. Fold and paste (E) in the same way as (D) was done, allowing the paper to project three-fourths of an inch at the lower end and side of the cardboard. Fold and paste these edges to the outside of the cardboard. Paste paper (E) one-half inch from the binding to finish the outside of the back cover.

Turn in and paste a one-fourth inch strip on one long edge of each piece (B). Paste these across the corners of (A) to make triangular pockets at each corner 1½ by 2½ inches. Fold the ends and paste them to the back of (A).

The design will be printed on paper (C). Paste this one-half inch from the binding to cover the outside of the front cover. Fold inside and paste the three-fourths inch projecting edges. Paste piece (A) on which the triangular corners have been pasted to the inside of the front cover. Slip the blotting paper into position.

Option 2. Pupils of this grade may design a calendar to be printed by the boys in the manual training shop. One of these prints will be sent to the studio to show the size and style of calendar determined upon. This print should be received previous to November 1. Plan the size and placing for the decoration. The design for the calendar is to be made a competitive problem. Designs are to be finished as pencil tracings and are to be ready for inspection and selection the first week in December. Zinc etchings will be made from the two most successful designs. Mount the calendars ready for the prints, which should be received from the shops in time to mount them and finish the calendars before the end of the first half year.

Option 3. Practice the arrangement and grouping of letters to form words. Arrange and letter a festival card, including a greeting, motto, or appropriate quotation. This card should have one or two well-designed and consistent capital, initial, or illuminated letters. Give careful attention to the balance, margins, and unity of the card. This card may take the form of a flat card, folder, or triptych, and should be inclosed in an appropriate envelope.

IX A. Establish the color for the picture frames when they are returned from the shops.

Option 1. Pupils of this grade may make a folding writing tablet and decorate the same. The designs should be individual and will be painted on the tablet cover, not printed as in IX B. The corners of the inside blotter may also be decorated. Pupils may have the remainder of this half year for the completion of this problem.

Option 2. Practice the arrangement and grouping of letters to form words. Arrange and letter a festival card, including a greeting, motto, or appropriate quotation. This card should have one or two well-designed and consistent capital, initial, or illuminated letters. Give careful attention to the balance, margins, and unity of the card. This card may take the form of a flat card, folder, or triptych, and should be inclosed in an appropriate envelope. The remainder of the year may be devoted to the completing of this card.

FOLIO.

One completed writing tablet, or one completed calendar, or one completed card. One working drawing for the picture frame.

JANUARY AND FEBRUARY.

Aims: Observation and appreciation of simple beauty in common objects. Power to record observations of form truthfully.

Give all the pupils practice in drawing horizontal ellipses, vertical and horizontal lines, and quick sketching from objects. By means of hemispherical objects, circles of cardboard, hoops, wire cylinders, or diagrams on the board, review the term foreshortening. By means of pictures, sketches, and objects lead the pupils to see convergence in retreating edges, to represent it, and to understand enough about it to make consistent sketches. Correct or incorrect illustrations that the pupils may collect will make interesting study. Make several simple, rapid sketches to show convergence in retreating parallel lines, using paste-board boxes as models, singly or in groups.

Make careful, well-studied pencil drawings of cylindrical, hemispherical, conical, spherical, or rectilinear objects. Select one object, study it until a successful drawing is accomplished. The following list will make good studies: Japanese bowls, vases, bottles, cooking and preserving utensils, cereal boxes, berry boxes with vegetables, dry measures with vegetables, bowls and sprouting onions, cereal box and measuring cup, agate or tin basins, pails, liquid measures, milk can and a bowl, the front and one end of the room, or a partly open door.

Practice pencil shading to gain power in laying an even gray tone of parallel lines. Try representing shade surfaces in a simple manner on one of the object drawings.

COMPOSITION.

When this is successfully accomplished, try either of the following problems:

(a) Make a careful pencil drawing of an object or group of objects. Accent and represent the shade surfaces.

(b) Make a careful pencil drawing of an object or group of objects. Cut out the drawings, trace and transfer to the colored paper that approximates in tone some dominant tone in the objects, and color with crayons and lead pencil to suggest the tones of the objects; or make an accented pencil drawing of the corner of the room, or a pencil drawing illustrating the effect of convergence in small objects. This drawing may be an accented and shaded pencil drawing, or a drawing done on tinted paper and suggesting the color of the objects.

FOLIO.

One accented pencil drawing of a single object or group of objects. One accented and shaded pencil drawing of a single object or group of objects. Or one colored drawing on tinted paper of a single object or group of objects.

MARCH, APRIL, MAY, AND JUNE.

DESIGN.

IX B. One lesson in picture framing should be given in the latter part of April or the first of May. In this lesson the boys should establish the proper width for the frame of the picture they are to frame during their A section in the manual training shop. The drawing teacher should supervise the selection of the picture.

Option 1. Pupils of this grade may make a folding writing tablet and decorate the same. It will be necessary to have the decorative designs for these tablets made first in order to allow time for the wood blocks to be made and the covers to be printed from them. Arrange the decorative designs within $4\frac{1}{2}$ by $8\frac{1}{2}$ inch rectangles. The design is to be made a competitive problem, and is to be finished as a pencil tracing and to be ready for inspection and selection in the second week of April. The designs for the writing tablet may be finished as in November and December IX A or IX B. Wood blocks may be cut in the shops or studios.

Option 2. Pupils of this grade may design a calendar to be printed by the boys in the manual training shop early next fall. One of these prints will be sent to the studio to show the size and style of the calendar determined upon. Plan the size and placing for the decoration. The design for the calendar is to be made a competitive problem. Designs are to be finished as pencil tracings and are to be ready for inspection and selection in April. Zinc etchings will be made from the two most successful designs. The mounting of the prints and calendars may be done during this term or in the fall as IX A work.

COLOR STUDY.

Review or teach color terms. Make a special review of monochromatic, analogous, and complementary colors and harmonies.

Make applications of various color harmonies to simple interiors—side wall, frieze, woodwork, and doorway with portière, or a fireplace and settle.

DESIGN.

IX A. Option 1. Prepare designs for the graduation program. This should include the proper placing of the title, name of the school, and date, together with some border, corner ornaments, center supporting decoration, or appropriate landscape composition. The selected design will be etched and printed in the manual training shop.

Option 2. Pupils of this grade may design a book plate. The more satisfactory designs will be etched in the manual training shops as zinc process and prints made and returned to the studios.

COLOR STUDY.

Select and establish the color for the picture frames when returned from the shops.

Review or teach color terms. Make a special review of monochromatic, analogous, and complementary colors and harmonies.

Make application of various color harmonies to simple interiors—side wall, frieze, woodwork, and doorway with portière, or a fireplace and settle.

FOLIO.

One completed writing tablet, or one completed calendar, or one completed graduation program, or one completed book plate. One application of each color harmony studied.

MANUAL TRAINING.**IX B.**

One required piece of work such as the stepladder or tabouret. The balance of the time may be given to an elective piece. In cases where the classes take up the calendar in their art work one or two cuts will be etched as selected from competitive designs.

IX A.

One required piece, the framing of a picture. A working drawing is to be worked out in the art department in the latter part of the IX B term. As soon as the frames are constructed, the picture is to be placed in the frame with the glass and sent to the studio to have the color determined. Elective work will follow.

NOTE.—See the drawing outline for references to correlated problems.

PICTURE STUDY.

The aim of this study is to acquaint pupils with some of the great paintings, to develop in the children a more critical observation of works of art, and to establish and nourish a strong love for the beautiful as found in the arts of man and of nature.

The list of pictures suitable for study in the grades is given in four groups.

Teachers may select the one or two pictures they wish to consider with the pupils and arrange to take up this study at some advantageous time during the year. Whenever expedient correlate the picture study with oral or written language, history, geography, or literature.

GRADES I, II, AND III.

Aim to draw out from the pupils the story that is in the picture. Tell them the complete story, the artist's name, and a few simple facts about his life or work.

Village Choir—Lins.

Feeding Her Birds—Millet.

Children of the Shell—Murillo.

A Helping Hand—Renauf.

Out for a Sail—Walden.

Can't You Talk?—Holmes.

The Pet Bird—Meyer von Bremen.

Two Mothers—Gardner.

GRADES IV AND V.

Draw out from the pupils the full story that is in the picture. Explain in a simple way the composition of the picture, where the center of interest is placed, and why. Give them a few simple facts about the history of the picture, the artist's life, works, and characteristics of same.

Holy Night—Correggio.

Christ and the Doctors—Hofmann.

By the Riverside—Lerolle.

Holy Family—Lerolle.

The Shepherdess—Millet.

The Gleaners—Millet.

The Angelus—Millet.

GRADES VI AND VII.

Lead the pupils to decide where the most interesting part of the picture is placed and what helps to make this center of interest where it is. Explain in a simple way how and why pictures are composed with leading lines. Give the artist's name, period of his life, and a few facts about his work and general characteristics.

A Reading from Homer—Alma-Tadema.

Atalanta's Race—Poynter.

Automedon with the Horses of Achilles—Regnault.

The Horse Fair—Bonheur.

The Fighting Téméraire—Turner.

GRADES VIII AND IX.

Lead the pupils to appreciate the general composition of the picture. Lead the pupils to appreciate the masterly drawing or arrangement it may contain, its significant message, why or how it was created. Give the pupils a few salient facts as to the life, works, and character of the artist, the place where the picture is now located, and something of its general history.

End of Day—Adam.

Spring—Corot.

The Lake—Corot.

Delphic Sibyl—Michael Angelo.

Madonna of the Chair—Raphael.

Sistine Madonna—Raphael.

Aurora—Reni.

The Golden Stair—Burne-Jones

The Assumption—Titian.

PITTSBURGH, PA.¹

"Course of Study in Art and Elementary Industrial Training." General notes with first-grade outline.

GENERAL NOTES.

"Here may we create beauty with our own hands and learn the value of simplicity and restraint, as the Greeks learned it long ago."

In our public art education, we should have consideration for the capacities and needs of the many, rather than for the talents of the few, with faith in the potentialities of all. We should assume that all can draw and build as others assume that all can write and cipher; and, while we can not expect to make many great artists, should we not be better teachers, if we looked at each child as a possible Milton or Michael Angelo?

We must not forget that our aim should be the boy and not the box. It should be not the drawing that may be hung upon the wall, but the faculties that may be developed in the child.

Drawing is primarily a vehicle for thought expression, and is peculiarly fitted to effect a harmonious working of the child's discordant senses. True eyes and skillful hands must count for much toward industrial efficiency as well as aesthetic appreciation.

Drawing is the basic and logical plan from which all well-ordered creations are developed.

All children draw naturally and joyfully in their early years, but the prophecy of their early years is not fulfilled in the later ones. Perhaps it is because we have criticised too severely, and implanted fear where there should be spontaneity. Let us not judge the work of the little ones by adult standards, but remember that it is the endeavor that counts and accuracy will follow in due time.

Illustrative drawing should be encouraged in all the primary grades. It should be the natural graphic expression of the children's interests. Let them tell their stories in their own way, the teacher suggesting such corrections as will enable the story to be told in a better way.

There is a difference between having to say something and having something to say. The abstract problem kills the interest which the illustrative work fosters.

Reading, language, geography, and history offer rich opportunities for graphic expression—visualization becomes a habit, knowledge is clarified, and the child thinks in terms of pictures rather than words.

Pictorial drawing should be more vital, more genuinely useful to the pupils and more necessarily a part of the school work than we have commonly conceived it.

Nature drawing develops the power of accurate observation, furnishes rich material for decorative purposes, and acquaints one with material for later scientific study.

Models.—Care and discrimination should be exercised in the choice of models. The simple vase with its beautiful lines and mat glaze is preferable to the glossy over-elaborate one. Seasonable nature specimens should be selected with a regard for their simplicity, character, and general fitness.

All objects should be drawn free-hand, without the aid of rules.

Reference material should not be copied but used in stimulating children to like expression.

The principles of perspective should not be taught, as such, in the earlier years. Little by little the child should be led to observe conditions which will later be confirmed.

Design is synonymous with thought, and means plan in a logical and orderly manner, to the end that the useful thing may become beautiful as well. As forms are studied for decorative purposes, the memory is strengthened and the imagination quickened. The work in design should be closely related to our manual construction.

¹ C. Valentine Kirby, director.

Color study is of vital importance. It should not be conducted in a hit and miss way, but should aim to develop and refine the color sense. This will lead to better discrimination between good and bad color combinations on the person and in the home, and an enhanced joy of living, through a greater appreciation of nature and art.

In describing color, the terms hue, value, and intensity (or chroma) are used.

Hue is the quality by which we distinguish one color from another.

Value denotes the amount of light in a color.

Chroma (intensity) denotes the strength of a color.

Clay Modeling supplies the most valuable and fundamental hand training, developing as it does the sense of touch and a real understanding of form in three dimensions. This experience means the concrete thought necessary in shaping wood, stone, or metal.

Cardboard Construction should teach the basic principles of construction, and prepare the way for a knowledge of sheet-metal work, woodwork, and steel construction. The aim should be a serious one.

Weaving, Basketry, etc., are valuable so far as they work for greater skill and teach good design. Pupils should at least know the elementary processes of the textile industry.

Correlation.—Drawing and elementary industrial training should be intimately related to the regular school work.

Nearly all school studies are made more interesting by this correlation, and the impressions more lasting.

In brief, the drawing and manual training should be made of practical use throughout the child's school life, that it may assert its educational value as a common means of expression. It should be utilized as a help in other studies; observation in the nature and object drawing should lead to a keener mental attitude in language; the study of design should mean neatness and order in the written work; the making and construction work may be used in arithmetic; and again, the arithmetic should be used in constructive design, the nature study in nature drawing, and geography in illustrative drawing. In other words, the drawing should be made of vital importance to the child, for his mental, physical, and spiritual uplift.

"A room without pictures is like a house without windows."—RUSKIN.

Art Study.—It is by the contemplation of beautiful things that we grow more like them, and it is but a step from the beautiful to the good. All truly great art is ennobling for this reason.

The art study course is planned to acquaint the children with the world's best art, and is arranged to conform with their different stages of development and appreciation.

Special attention has been given to the selection of pictures which are reproduced in half-penny prints, that they may be possessed by each child and attached to explanatory notes upon the subject.

The school calendar, with its appropriate monthly decorations as well as other seasonable illustrations, brightens the schoolroom and cheers all who are within.

Consider methods for economic distribution and collection of materials.

Develop habits of neatness in the care of color boxes, brushes, and other materials.

The supervisors desire to see all work and make selections for exhibition purposes.

Teachers should acquaint themselves with the work of the previous grade as well as that of the one following.

*See thou bring not to field or stone
The fancies found in books;
Leave authors' eyes and fetch your own,
To brave the landscape's looks.*

EMERSON.

"Fortunate is he who at an early age knows what Art is."—GOETHE.

FIRST YEAR.

TIME.

Art and industrial training combined 200 to 300 minutes weekly. Lessons daily, closely articulated with primary activities and interests.

SEPTEMBER.

Illustrative Drawing.—Some story of the summer's vacation.

Nature Drawing.—Draw grasses and simple flowers with pencil, brush or colored crayons.

Color Study.—Begin to teach color names. Look for these colors in rainbow, fruits, and flowers, and represent them with crayons or water colors.

Blackboard Drawing.—Circles and straight lines in various directions. Free-arm movement.

Paper Cutting.—Cut and mount the shapes of common fruits and vegetables.

Correlative Work.—Activities related to the language, geography, and history work.

Picture Study.—First steps, Millet.

OCTOBER.

Illustrative Drawing.—Stories in "picture language" suggested by the language lessons.

Nature Drawing.—Common seeds and seed dissemination, recognition of common trees, leaf forms, coloring, and falling of leaves, etc., in ink silhouette and color.

Color Study.—Show six standard colors in prismatic spectrum.

Tom Tinkum had six toy balloons,
And all of these were white;
He took his paints and took his brush
And worked with all his might.
"The first one of the row," Tom said,
"I'll paint my brightest red.
And then I'll mix my red with yellow
For orange," said the little fellow,
"And now I'll paint a pretty one
All round and yellow like the sun.
By mixing yellow with blue
I'll get a lovely bright green hue.
Of blue my next balloon shall be,
The color of the sky, you see.
And now my red and blue I'll mix
To make a violet—number six."

or

The green leaf is a pretty fellow
And jolly is the sun so yellow.
The orange is a golden ball
And red the apple in the fall.
The violet has a purple hue
And, over all, the sky is blue.

Blackboard Drawing.—Continue September exercises and encourage memory drawing of some object seen outside.

Industrial Training.—An expression on paper, in cardboard, clay, etc., associated with the study of Indian Life and Hiawatha's Childhood. Fold a drinking cup, use 8-inch square.

Picture Study.—Baby Stuart, Van Dyck.

NOVEMBER.

Illustrative Drawing.—Suggested by the Thanksgiving harvest season. Stories in the month's language work. Use colored crayons.

Industrial Training.—Articles associated with the early life of the Pilgrims and the first Thanksgiving.

Clay Modeling.—Simple fruit and vegetable forms.

Blackboard Drawing.—Loops erect and in combination. Secure facility of expression.

Picture Study.—Hiawatha, Norris. Collect pictures relating to Thanksgiving Day and its history.

DECEMBER.

Illustrative Drawing.—Winter pastimes, stories in language and reading.

Design and Manual Training.—Make Christmas greeting cards, bookmarks, or candy holders, using cover papers, colored crayons, or water colors. Continue the month's work along these lines, picture stories and handwork suggested by the holiday season. Other Christmas gifts, calendars, Christmas tree decorations, etc. Model a snow man, draw the toys desired, reproduce shop windows, construct sled, etc.

Picture Study.—Madonna of Chair, Raphael. Collect pictures relating to the Christmas season, and the topics in the language work of the grade.

JANUARY.

Illustrative Drawing.—Draw from memory holiday gifts and incidents.

Design.—Repetition of simple units for border. Rhythmic relationship, simple lines. In connection with this, teach pupils to understand such terms as straight, curved, horizontal, vertical, and oblique. Talk about the use of border for a booklet, table mat, etc.

Blackboard Practice.—Circles and ellipses. A little enjoyment created by converting these shapes into faces, animals, etc.

Industrial Training.—Make a "Wordbook." Make an envelope to contain some school work. Apply simple lettering and design.

Picture Study.—Can't You Talk? Holmes.

FEBRUARY.

Illustrative Drawing.—Illustrations suggested by Washington and Lincoln anniversaries.

Design and Paper Cutting.—Apply to simple and appropriate valentines. Colored papers, crayons, or water colors. Refer to School Arts Book, February, 1907, pages 509-510.

Industrial Training.—Suggested by the history work of the grade related to the life of Washington and colonial life.

Picture Study.—Portrait of Washington, Stuart.

MARCH.

Illustrative Drawing.—Stories and games appropriate to the season. Use crayons or pencils.

Industrial Training.—Objects suggested by the month's geography and history study, the "Children of Holland."

Color Study and Paper Cutting.—Easter eggs and Easter cards.

Manual Training.—Model eggs, chicks, and rabbits.

Picture Study.—Angels Heads, Reynolds.

APRIL.

Illustrative Drawing.—Story of the coming of spring. Use colored crayons.

Nature Drawing.—Drawings from pussy willow, or other simple spring growths.

Industrial Training.—Spring booklet, to contain birds, flowers, and other drawings.

Napkin rings, circular picture frames, etc., with raffia, simple winding. Model squirrel, duck and swan, birds and nest.

Picture Study.—Age of Innocence, Reynolds.

MAY.

Nature Drawing.—Drawings in color of simple flowers.

Illustrate.—Making garden and other occupations.

Industrial Training.—Model simple flowers on a tile, simple furniture from square fold, garden tools, or objects suggested by the month's geography and history work.

Picture Study.—Two Families, Gardiner.

JUNE.

Review and complete unfinished work.

Picture Study.—Children of the Shell, Murillo.

ST. LOUIS, MO.¹

“Course of Study in Drawing.”—General Suggestions with First-Year Outline.

GENERAL SUGGESTIONS FOR ALL GRADES.

I. ARRANGEMENT OF PLAN.

The plan for the work in drawing is arranged by months. Neither more nor less time than allotted should be given.

II. WORK.

1. *Marking.*—The pupil should make his drawing first. When the drawing is completed he should write on the same side of the paper, at the bottom of the sheet, or on the back, the name of the school, his grade, his name and the date, omitting the quarter, except in first and second grades. Never write at the top. The teachers will kindly see that every paper is marked in this way before sending to the office, and do the marking for the children who are too small to do so much writing.

Marking of booklets should be on the first page of the inside paper; of book-cover designs on single sheets; frames and calendars, on the back; of boxes and baskets, on the bottom, before pasting.

Where the classes in a room are in different grades, the grade marked on the papers must be that of the work done in drawing by the two classes, not the grade of each class.

2. *Selection.*—The teacher will retain each set of papers as a whole until seen by a supervisor, arranging on top the best five papers of each exercise, these to be sent to the office when so directed.

3. *Arrangement.*—The teacher will arrange the exercises according to the weeks in which they were given, and then according to the months, in order that the supervisor may follow the sequence of the work. Please do not pin, tie, nor cross papers sent to the office.

¹ (Mrs.) M. E. Riley, supervisor.

III. USE AND CARE OF MATERIALS.

1. *Pencils*.—Pencils for drawing should never be used for other work. They should be kept well sharpened. No good work can be done with unsharpened pencils, short, stubby pencils, or pencils that the pupils have put in their mouths, as this hardens the lead.

2. *Color boxes*.—Great care should be taken that water-color boxes are never put away soiled. Much waste will be avoided if the cakes of color are cleaned with clear water and brush at the close of the lesson.

3. *Brushes*.—The brushes must always be cleaned thoroughly, and when collected should have a good point. This point can only be kept by inverting the brushes point up in a glass or other vessel, and allowing them to dry in this position. Bags and boxes have proved unsatisfactory places for brushes.

Never leave brushes standing in the glass of water. It destroys the brush.

4. *Colored crayon*.—Use colored crayon for all work in illustrative drawing.

It may be used in the development of the design in all grades, the finished work, however, being done in water color, except in the first grade.

5. *Paper*.—(a) The colored cover paper is to be used for design and construction.

(b) The new tinted paper is to be used for plant and landscape studies in water color, for design, and for illustrative drawing. When present supply of white paper is exhausted use tinted paper for all studies.

6. *Preservation of supplies*.—Each teacher must keep carefully preserved in her own room the reproductions of studies of various subjects, supplementary notes, and mimeograph outlines.

Alphabet cards, pictures for picture study, India ink, etc., must be carefully preserved and kept in some one place, accessible to all teachers, and returned to the same place after using.

7. *Collections of still life*.—The collections of still life furnished each school should be used, not objects brought from home unless specially requested.

8. The work of each month, whether kept at school or sent to the office, should be wrapped in paper or put in a covered box, that it may be clean.

All constructive work should be sent to the office in boxes that it may not be crushed.

9. Keep strawboard backs of blocks for constructive work.

IV. DIVISION OF TIME.

1. More than three periods should never be given at one time, nor more than one lesson in a day.

V. GRADING.

1. At the beginning of a term where the first class in a room is in one grade, and the second class is in the fourth quarter of the next lower grade, take the drawing of the higher grade for both classes.

2. Where the second class is in the first, second, or third quarter of the next lower grade, take the lower grade drawing for both classes.

3. At any time during the year, when the second class enters a higher grade in other subjects, begin the drawing of the higher grade.

VI. CHANGE OF CLASSES.

When pupils have been promoted, the teacher receiving them should consult their former teacher about the lessons they have had, in order that the same may not be repeated. For example: Pose, position of objects, etc.

Take up the work of the next higher grade when the second class reaches the grade of the first class.

VII. MATERIALS AND THEIR ARRANGEMENT FOR LESSONS.

1. Single leaves, flowers, or twigs should never be used, and care should be taken that plant studies are not flat, but in easy, natural positions.

2. All materials and objects for study should be selected and placed in the room before the beginning of the session, "plant studies" having been arranged in glasses of wet sand, ready to be placed on boards.

3. Each study should have but one kind of plant. This does not mean that the whole room must work from the same kind of plant, but that no study should contain a mixture. Begin near the top of the paper and draw to the bottom.

4. All studies below the eye should be placed upon wide boards across the aisles so that every child may have a good view. Studies should be placed in the front of the room for pupils occupying the front seats.

5. Pupils should not draw the studies arranged on the board resting on their own desks.

6. Number of studies of plants or objects to be used when placed below the eyes:

(a) Where there are single seats in a room, one study must be placed in the middle and one study in the front of every alternate aisle. Where there is an odd number of rows of single seats in a room, two studies must be placed in one outside aisle.

(b) Where there are double seats in a room, one study must be placed in the middle of every aisle and one study in the front of every aisle.

7. When placed above the eye, use one large object or group of large objects, in order that each child may have a different point of view. Place the study in the middle of the front of the room on a box.

8. (a) Shadow boxes are to be used in all grades, that the backgrounds of the studies may be simple. As some of the best shadow boxes are made of pasteboard boxes, it would be better for each teacher to have her own set (at least six for room of six rows of single seats, eight for the rooms having double seats. The full number is needed for plants, and all studies of objects below the eyes). The shadow boxes should be lined with white.

(b) For a study above the eye, place the object or group on a large box and draw a small part of the middle vertical edge of the box and only enough of the top edge or edges visible to extend a very short space on either side of the object drawing.

(c) Do not draw front edge of the board on which the object below the eye rests.

VIII. REPRODUCTIONS.

1. All copies of pencil reproductions should be drawn the size of the originals.

2. *Plant*.—Before doing pencil massing from plant study in grades I and II, devote two periods to copying carefully for method the reproductions sent to the schools.

3. *Landscapes*.—Reproductions of landscape studies in pencil are to be copied by all pupils in third grade only, before they do original work.

4. All teachers must have sufficient number of tree studies to supply each pupil in their rooms with a copy.

The illustrations of the different trees should be equally distributed.

Pupils in grades I and II, inclusive, copy the tree studies for growth, technique, and comparison of their characteristics.

In all grades study form, growth, etc.

In all grades use the tree studies in connection with illustrative drawing when trees may be used in the subjects to be illustrated.

IX. CRITICISMS.

In all drawing lessons, teachers should criticize the drawings of as many pupils as possible. In representation they should be careful to look at the model from the child's point of view.

X. WATER COLOR.

Water color is to be used for plant study, landscape, design, and such animals as have brilliant, rich color.

At the beginning of a water-color lesson, have each pupil moisten the entire top of each cake of color to avoid its wearing in holes.

As a rule, no outline should be drawn with a pencil. Any exception to this is stated in the grade to which it applies, when the outline drawn with a pencil should be extremely light.

All work in first and second grades is to be done on dry paper.

The other grades should make designs and ink studies on dry paper, but all other work on wet paper. The wet paper must not be used while the surface shines.

Paper should be wet on both sides.

The cloths used for water color are better when at least twice the size of the paper.

The teachers will find it very convenient to have a supply of cloths for water color always on hand, as fine specimens will often be brought in unexpectedly and it is well to be prepared for a lesson. In that case, date the lesson on the day it was given.

Except in design, where large washers may be required, the color should be put on the paper directly from the cakes.

For design mix the colors thoroughly in the pans, and enough to complete the design, thus insuring a uniform tone.

XI. PENCIL MASSING.

1. The same direction of stroke should be used throughout on one member, as variety of directions on the same leaf or flower, etc., gives a confused appearance.

2. Treat all leaves as masses of tones, disregarding veins.

3. Stems should have line of growth carefully followed. Try to show varying thickness. Blade-like leaves should also be expressed with strokes following growth.

4. In first and second grades, the emphasis should be placed upon studying growth and getting a mass of tone, avoiding woolly, fuzzy treatment. Light and shade will come in higher grades.

5. Thoughtful study of reproductions of plant studies that are in each room will explain the difference between outlining a mass, and using accents where needed.

XII. PLANT STUDIES.

Plant studies should be worked out in the medium best suited to them.

Single sprays should never be used unless they are broadly branching, and flower studies should always be accompanied by leaves.

Plant studies need high shadow boxes. In grades in which light and shade is studied, the shadow boxes should be placed so as to concentrate the light and make a simple background.

The studies are to be made in pencil, ink or color. When ink or color is used, there should be no pencil outline. For "pencil massing" plants with small flowers and grass-like leaves are among the excellent subjects.

White or delicately colored studies are not good for water color in the schools. Plants full of brilliant color should be used. Weeds, grasses, etc., are better for pencil or ink.

The following list of easily obtained plants is suggested, although there are many others often used:

Fall.—Red clover, seed pods on the branch, althea, single dahlias, persimmons, and other fruits on the branch, bittersweet, zinnia, petunia, marigold, canna, rose-hips, verbena, salvia, morning glory, clematis, honeysuckle, wild sunflowers, Black-eyed Susan, Virginia creeper when on the main stalk with leaves, marshmallow, trumpet vine, snapdragon, lantana, smartweed, vervain, jimson, ironweed, etc.

Spring.—Red clover, wild sweet william, larkspur, honeysuckle, narcissus, crocus, jonquil, daffodil, cowslip, verbena, iris, sedges, yellow primroses, spiderwort, japonica, fruit blossoms, flowering shrubs, columbine, etc.

Do not use cosmos, violets, pansies, golden rod, or lilacs for color studies. When schools are in localities where plants are difficult to obtain, the teachers should plan together.

XIII. OBJECT STUDY.

(a) All objects should be drawn in outline in grades I, II, III, IV.

(b) Measurement for proportion should begin in fourth grade and be used always in all object work in fourth to eighth grade, inclusive.

All measurement and proportion lines should be sketched very lightly, and not erased, unless the study is to be composed or carried out in light and shade.

XIV. STUDY OF THE HUMAN FIGURE.

1. *Points to be avoided.*—(a) Care should be taken not to repeat the same pose from room to room, or the same pose for more than one lesson in the same room.

(b) The pose having a child or children under an umbrella should not be given.

(c) Faces are not to be drawn; indicate outline of head and mass of hair.

(d) Poses of children "in action" are more easily drawn than erect poses. Avoid erect poses in lower grades, and in other grades unless the pupils have considerable proficiency in sketching.

(e) Do not "block in" in the manner suggested for still life.

(f) Do not draw a line to represent the floor.

2. *Suggestion for study.*—(a) Study leading lines and proportion. (There is no time for finding proportion mathematically.)

(b) Pay special attention to proportion and form of legs, feet, and arms.

(c) Make short-time sketches, at first working for direction, size, and proportion; no detail. After that spend more time emphasizing good form. Do all pose work in a large sketchy way.

3. *Subjects.*—(a) Pose to illustrate a story.

(b) Pose a child and have other pupils tell the story about the pose.

(c) Pose to illustrate action or occupation.

(d) Pose to illustrate feeling.

(e) At special seasons, characters suggested by the season may be represented simply.

4. *Composition.*—When sketches are made to use in composition, each sketch should be drawn on a separate piece of paper, in order that there may be room to complete the study. Copies should not be used.

XV. ANIMAL STUDY.

1. *List.*—The following list is given to suggest animals usually available: Rabbits, dogs, cats, cows, horses, donkeys, goats, geese, ducks, chickens, turkeys, and parrots. In some schools other animals have been drawn also.

2. Whenever it is possible, have animal sketches made out of doors.

3. *Sketching.*—The drawings of animals should be large and left incomplete, a few being made on each page, unless the animal keeps still for a long enough time to make a complete study. Do not go on with a drawing when the animal has changed its position.

XVI. DESIGN.

1. *Construction.*—(a) Rulers and measurement should be used in planning all "made" objects above second grade, as one of the objects of this work is accuracy.

(b) In making boxes, baskets, frames, etc., allow for large laps, as this gives firmness. Laps for the corners of lids ought not to be cut out, but left and pasted. Finish neatly. Leave no raw edges.

(c) In the first and second grades, small made objects have proved more satisfactory than the larger ones. Double paper and paste together to make legs, backs, handles, wheels, etc., of objects to make them firm. All made objects should be pasted.

(d) When eyelets are used in constructive design, they should be made at home with a punch or a wire nail.

2. *Decorations.*—(a) When design is to be applied, the object to which it is to be applied must be considered before doing the work, so as to have it right in size, etc.

Work for variety of design. Have each child cultivate his creative faculty.

Good design demands the proper relation of both large and small shapes; therefore avoid the use of too many small unconnected spots. The shapes of the spaces formed in the background are as much a part of the design as the unit itself.

(b) Use subdued colors in all designs, avoiding violent contrasts.

(c) All borders should have marginal lines and no design should extend to the edge of the space decorated.

(d) All lettering on book covers, valentines, Easter cards, etc., should be printed directly on the paper, not done separately and pasted on.

All capital letters should be of an equal height. Erase construction lines. Do all lettering in a color of the decoration.

Diagonal arrangement or vertical and horizontal lettering on the same page should be avoided.

(e) Work done for special seasons (Thanksgiving, Christmas, etc.), is to be given to the children for the special day, except one retained for the office. That one must be original, not duplicate.

(f) Where booklets are made a quotation appropriate for the season should be done as a writing lesson on separate paper made slightly smaller than cover, keeping the same proportion, and fastened inside the cover.

Avoid Christmas stockings, slippers, hearts, Easter eggs, and sprays of flowers, unconventional in treatment, for decoration.

XVII. COMPOSITION.

Squares and oblongs are the most desirable forms for composition. Circles and ellipses should be avoided.

Reference books useful in the study of composition and design.

BATCHELDER, ERNEST A. Principles of Design.

“Design in Theory and Practice,” in *The Craftsman*, October, 1907, to September, 1908, inclusive.

CLARK, ERNEST E. A Handbook of Plant Form.

CRANE, WALTER. Line and Form.

DAY, LOUIS F. Nature in Ornament.

DOW, ARTHUR W. Composition.

FOORD, J. Decorative Plant and Flower Studies.

NICHOLSON, WM. The Square Book of Animals.

An Alphabet.

Types of English Life.

The Craftsman.

Palette and Bench.

The Ceramic Studio.

Manual Training Magazine.

XVIII. LANDSCAPE COMPOSITION.

All landscape is expressed in terms of representation or decoration.

1. the composition of the picture must be carefully considered.

(a) Unequal spaces are usually more interesting than equal ones.

(b) The principal object of interest should be near the center of the picture space, not in it.

2. The composition from either mimeograph copy or nature should be selected with finders and sketched lightly in pencil before working out in pencil or color.

3. No landscape work should be attempted before developing the observation and love of beauty in nature. Landscape lessons should be preceded by observation lessons in order that the pupils may have ideas to express about color in nature. The difference between the color overhead and near the horizon, sunrise and sunset, clear and cloudy days, calm and windy days, spring, summer, autumn, and winter, and the effect of distance upon color at all times, must be emphasized. Special attention should be given to the drawing of roads, tops of houses and chimneys, and the relative size of objects, near and distant. Notice particularly the contrast for tones.

4. In decorative treatment of landscape flat tones are used, each shape and space being treated as part of the whole design.

In selecting a color scheme the true values of nature are not considered.

In representative landscape, edges are kept soft and broken, while in decorative they may be outlined with an even tone of color.

XIX. ILLUSTRATIVE DRAWING.

Order of Development:

Landscapes.

1. Placing of horizon line.
2. Treatment of sky and ground.
3. Treatment of distant foliage.
4. Composition of large trees in the foreground.
5. The placing and proportional relations of people, animals, houses, and other objects.
6. Perspective of roads and rivers.

Street scenes.

- I. Parallel view—looking across the street.
 1. Placing of horizon line.
 2. Treatment of sky and street.
 3. The placing and proportional relations of buildings, people, and objects on the street.
- II. Angular view—looking up the street.
 1. Perspective of street, buildings, people, and objects on the street.

Interiors.

1. Division of wall and floor spaces.
2. Treatment of walls, floor, and windows.
3. The placing and proportional relations of the furnishings and people.

As each new topic is added the preceding steps should be constantly reviewed.

All lines should be eliminated. To obtain the best tone the crayon must be held close to the paper so that the beveled side may be used.

The illustration must express by its color values the time of day and season of the year.

Figures and animals should generally be in action.

The sky space should be covered with color down to the horizon line and the ground down to the lower edge of the picture before foliage, houses, or people are placed.

Houses, trees, animals, and people should be placed in the picture between the horizon and lower line and not on the line.

A definite subject should be in mind and each child's illustration is not complete without a subject written at the bottom of sheet. Plan for this spacing when drawing margin.

Where quotations are to accompany illustrations the sheet must be composed, taking into consideration spaces for both keeping the picture as large as possible. The quotation should never appear in ink.

Every quotation must contain some word picture which it is within the power of the children to translate into a color picture. Each should show that it is simply another means of expressing the same emotion.

Complete each illustration with a strong, dark crayola line inclosing it.

XX. PICTURE STUDY.

Picture study is to be pursued in all grades. The pupils in the fifth to eighth grades, inclusive, are, in addition to the study of the picture, to write a brief composition about the picture and the artists for their grade. In studying the pictures the teacher should tell the pupils the most interesting points about the picture and the artist in a simple, direct way. There is no desire for stilted composition or biographies which repeat facts from cyclopedias.

The object of picture study is to bring the pupils in contact with some of the great works of art, and to arouse in them a love and appreciation of what is beautiful.

With this thought in mind, the pictures chosen are such as time has tested. Another object in view has been to create a standard by which the pupils may judge the worth of new works of art as they meet them.

When studying pictures the teacher should meet the pupil's love of the beautiful by giving him information and suggestions that will open before him the true meaning of the picture.

Special Reference List.

Masterpieces in color series. (See alphabetical list for individual artist.)

Great Artist Series. (See alphabetical list.)

HOPKINS, J. F. Architecture, 65c.

CAFFIN. A Child's Guide to Pictures, 65c.

How to Study Pictures, 65c.

WHITCOMB, IDA P. Young People's History of Art, 70c.

BRYANT, LORINDA. Pictures and their Painters, 65c.

A list of books for general reference will be found on the last pages of Course of Study, 1909. Each teacher must adapt the information found in the books she consults to her grade, and not give the pupils more than they can grasp.

FIRST YEAR OR GRADE.

First and second quarters.

Before teaching any subject read carefully the directions in "General suggestions for all grades."

- Mark the quarters in first grade on all papers I-1, I-2, I-3, or I-4.
- Use bogus paper for all dictated work in construction when colored paper is not specified.

For pupils entering the grade in September.		For pupils entering the grade in September—Con.	
SEPTEMBER.	Number of periods.	OCTOBER.	Number of periods.
1. Where looms are in use, work on design for mats.....	5	1. Plant Study—	
Those who do not use looms give the time to substitute work. (See Bulletin.)		(a) Color.....	9
2. Teach some underlying principles of illustrative drawing.....	6	(b) Ink.....	4
(a) Sky and ground.		2. Illustrative Drawing.....	2
(b) Tree study, combined with (a), introducing trees with foliage from plates. (See General Suggestions XIX.)		A definite subject should be in mind, and each child's illustration is not complete without a subject written at the bottom of sheet. Plan for this spacing when drawing margin.	
3. Make stained glass effect.....	3	NOTE.—At this time allow pupils for seat work to make squares and fold into 16 small squares, preparatory to lessons in construction.	
4. Plant Study—Color.....	3	3. Design—Construction—	
(See General Suggestions VII, 4 to 8, inclusive, and XII.)		(a) Square box.....	2
		(b) Lfd for square box.....	3

For pupils entering the grade in September—
Continued.

NOVEMBER.	Number of periods.
1. Plant Study—	
(a) Color.....	6
(b) Ink.....	2
2. Design—Construction—Develop principles of structure. Work for variety.	
(a) Basket.....	3
(b) Wagon.....	6
3. Illustrative Drawing.....	2

DECEMBER.	
1. Design—Use colored paper.....	13
(a) Make picture frame. No decoration.	
(b) Any Christmas work desired.	
(See General Suggestions XVI.)	
NOTE.—Keep form simple and dignified.	
Do not use ribbons.	
2. Picture Study.....	2
(See General Suggestions XX.)	

JANUARY.	
1. Object Study—(See General Suggestions VII, 4 to 8, inclusive.) Black crayon.	
(a) Christmas toys, above or below the eye, according to the size and character..	4
(b) One large object above the eye.....	3
2. Illustrative Drawing—Introducing bare trees from plates.....	4
3. Design—Construction—	
(a) Sled.....	3
(b) Cradle.....	4

For pupils entering the grade in the middle of
the year.

FEBRUARY.	
1. Where looms are in use, work on design for mats.....	5
Those who do not use looms give the time to substitute work. (See Bulletin.)	
2. Teach some underlying principles of illustra- tive drawing.....	5
(a) Sky and ground.	
(b) Tree study, combined with (a), intro- ducing bare trees from plates.	
(See General Suggestions XIX.)	
NOTE.—At this time allow pupils for seat work to make squares and fold into 16 small squares, preparatory to lessons in construc- tion.	

For pupils entering the grade in the middle of
the year—Continued.

FEBRUARY—continued.	Number of periods.
3. Design—Construction—	
(a) Make a square box.....	2
(b) Lid for square box.....	3
(c) House.....	4

MARCH.	
1. Design—Construction—Develop principles of structure. Work for variety.	
(a) Sled.....	3
(b) Shed.....	4
(c) Wagon.....	6
NOTE.—At this time twigs might be put in water in the schoolroom to sprout for plant study.	
2. Make stained glass effect.....	3
3. Illustrative Drawing—Combined with tree study.....	4
A definite subject should be in mind, and each child's illustration is not complete without a subject written at the bottom of sheet. Plan for this spacing when drawing margin.	

APRIL.	
1. Design—Construction—Cradle or chicken coop.....	4
2. Plant Study—	
(a) Budding twigs. Ink.....	4
(b) Pussy willow, jonquils, or any plant that can be obtained. Color.....	6
3. Tree Study.....	2
One class at blackboard, one class use col- ored crayon, and exchange classes once dur- ing lesson.	
4. Illustrative Drawing.....	4

MAY.	
1. Plant Study—	
(a) Color.....	9
(b) Ink.....	4
2. Design—Construction—Furniture for doll house.....	6

JUNE.	
Illustrative Drawing—	
(a) Combined with tree study.	
(b) Interiors.	

Third and fourth quarters.

Mark the quarters in first grade on all papers I-1, I-2, I-3, or I-4.

Use bogus paper for all dictated work in construction when colored paper is not specified.

FEBRUARY.	
1. Design.....	12
(a) Border or surface, colored crayon on colored paper.	
(b) Valentines (use the knowledge gained above to apply in decoration). Do not use ribbons.	
(See General Suggestions XVI.)	
2. Make a study of winter trees from plates....	2
3. Illustrative Drawing—Combined with tree study.....	4
A definite subject should be in mind, and each child's illustration is not complete with- out a subject written at the bottom of sheet. Plan for this spacing when drawing margin.	

MARCH.	
1. Design—Construction—Go-cart.....	6
2. Object Study—Pencil or black crayon. Large single objects above the eye.....	4
(See General Suggestions VII, 4 to 8, in- clusive.)	
3. Object Study—Single objects below the eye. Pencil or black crayon.....	4
4. Pose—Ink, pencil, or black crayon.....	4
5. Illustrative Drawing.....	2
(See General Suggestions XIX.)	

APRIL.	
1. Construction—Original.....	4
2. Design—	
(a) Lettering the word "Easter" on squared paper.....	3
(b) Make Easter booklet, lettering the word "Easter," nicely filling the space. Use colored paper. No other decora- tion. Do not use ribbons.....	3
Take time of writing to copy an appro- priate quotation on separate paper made slightly smaller than cover and keeping the same proportion, and fasten in booklet.	
3. Plant Study—Pencil or black crayon mass- ing, ink or color. (Budding twigs).....	4
4. Design—May basket (woven or plain). If woven use two tones of colored paper....	6

MAY.	
1. Pose—Pencil, ink, or black crayon.....	2
2. Plant Study—	
(a) Pencil or black crayon massing or ink..	2
(b) Color.....	6
3. Animal Study—Out of doors when prac- ticable. When indoors, water color is suggested.....	3

For pupils entering the grade in the middle of the year—Continued.

MAY—continued.	Number of periods.
4. Design—(a) or (b). (a) Make folded case for holding the children's papers with decoration in colored crayon to be completed in June.....	7
Develop design, keep simple.	
(b) 1. Make folded case for holding the children's papers, without decoration.....	7
JUNE.	
Design—(a) or (b). (a) Complete folded case with decoration. (b) 2. Make oblong box with separate cover, according to given measurements. Allow laps for pasting.	
SEPTEMBER.	
1. Make a study of trees from plates showing foliage.....	2
2. Illustrative Drawing—Combined with tree study.....	4
A definite subject should be in mind, and each child's illustration is not complete without a subject written at the bottom of sheet. Plan for this spacing when drawing margin.	
3. Animals—Out of doors when practicable....	4
When indoors, water color is suggested.	
4. Plant Study—Color.....	6
(See General Suggestions VII, 4 to 8, inclusive.)	
OCTOBER.	
1. Plant Study— (a) Color.....	9
(b) Ink, pencil, or black crayon massing...	4
2. Pose—Ink, pencil, or black crayon.....	5
3. Illustrative Drawing.....	2
(See General Suggestions XIX.)	

For pupils entering the grade in the middle of the year—Continued.

NOVEMBER.	Number of periods.
1. Plant Study—Pencil or black crayon massing or ink.....	2
2. Design—(a) or (b). (a) Make folded case for holding the children's papers, with decorations in colored crayon.....	15
Develop design, keep simple.	
(b) 1. Make folded case for holding the children's papers, without decoration.....	7
2. Make oblong box with separate cover according to given measurements. Allow laps for pasting....	8
3. Illustrative Drawing.....	2
DECEMBER.	
1. Design.....	13
(a) Make picture frame of colored paper with strawboard foundation. Work for strong corners. No decoration.	
(b) Any Christmas work, using colored paper. Do not use ribbons.	
2. Picture Study.....	2
(See General Suggestions XX.)	
JANUARY.	
1. Object Study—Pencil or black crayon. (a) Christmas toys above or below the eye, according to size and character of object.....	4
(See General Directions VII, 4 to 8, inclusive.)	
(b) Large objects above eye.....	6
(c) Single objects below eye.....	4
2. Pose—Ink, pencil, or black crayon.....	4

MINNEAPOLIS, MINN.¹

Drawing and paper cutting are used as a means of illustrating stories through the first four grades.

Object drawing is taught technically in the fifth grade and upward through the high school.

Perspective begins in the fifth grade and continues through the high school.

Design in first grade and through high school. The subject is more or less dictated throughout the grades in relation to construction work. Abstract principles are touched upon very little below the high school.

Color is used throughout grades and high school. Colored crayon in the first grade and water color beginning with the second. Crayon is used for design almost entirely in all grades. A definite study of color combinations, etc., is begun in the seventh grade.

The following is taken from a paper read at a recent art association meeting:

Minneapolis has in former years borne a reputation for trying experiments with all the "fads." We have been trying lately to be very conservative, and maybe you will think we are dropping behind. Several years ago we cut the time of drawing to one hour a week. With another hour for handwork in the first five grades and the two subjects now under one supervision we hope to do more in applying our design lessons. I have used freely an idea gained at one of our former meetings—that of cutting designs in the primary grades. I supposed the greatest difficulty would be found in arranging the units for a broader pattern, but I found that the children who had done so much free-hand illustrative cutting could not easily cut from folded paper a symmetrical unit. So we began with paper dolls. From the shape of the dolls we came to noticing the shape between the figures, and soon we became much interested in shape as subject matter growing from the realistic to the conventional. Sometimes we cut a number of figures together and use the result as a line of decoration for

¹ M. Emma Roberts, supervisor.

booklets. Sometimes we cut one larger unit and use it by itself. At Christmas time this cutting exercise serves many decorative purposes and is much to be preferred to the oft-used pictures from advertisement, postals, and fashion plates, or the even more objectionable hectographed outlines filled in by unsteady fingers and pasted to articles gold lettered by the teacher. Our efforts to have the children's work given its well-deserved place of honor have been well rewarded by the favorable comparison of the school product with the things offered for sale in the stores. And indeed I think the best of the little picture-mounted calendars, etc., on the market are due to school influence. We have used the paper cutting for design in various ways through the first six grades for sofa pillows, tiles, and embroidery and outline in the sewing department. We also use the cutting as a stencil in borders and surface. These ideas are not new, but seeing the illustrations which I have brought may help some one who is looking for different ways of using old ideas. In the fifth grade we begin using the ruled paper and thinking out our space relations more definitely by breaking up a geometric shape, such as a triangle or rectangle. In the grades above we draw first from nature and try to get our design suggestion from the forms thus obtained. We do not try curved lines at all in the grades—putting the emphasis entirely upon balance of black and white and pleasing variety in shapes and sizes of spaces. I am sure we talk more about the background shapes than about the units, as the relation of the background to the design as a whole seems the most difficult thing to teach. We do not try many different exercises, and I find myself reducing the number and difficulty each year—dwelling more and more upon the beauty of simplicity and the good taste which may be shown in the quiet tones selected, the general proportions of an article, and often in the absence of "applied design."

Our course in clay modeling has proved rather satisfactory and capable of being carried out in the ordinary schoolrooms. We have nuts and fruits on a plinth in the second grade, animals in high relief in the third, low relief tile in the fourth, tile with incised design in the fifth, and vase forms with incised decoration in the sixth.

DENVER, COLO.¹

Art Course of Study for the Elementary Schools (Copyrighted). General notes.

GENERAL NOTES.

The course of study.—All work is arranged according to seasons and should be given at the time indicated. For detailed directions teachers are referred to various teachers' manuals and drawing books, which are supplied as desk copies for consultation. Oftentimes their illustrations may be shown to the pupils advantageously.

Appliances, models, etc.—"Model supports" are used in drawing from models and objects. Six are provided for each two rooms; none for single rooms. They are for six places about the room, three in front and three about halfway back, resting on the desks. Place across alternate aisles where possible. See that the shelf portion of the support is level. The color of the ground or background may be changed by placing against them pieces of paper. For instance, in making water-color drawings from leaves and flowers light backgrounds generally are best. Sometimes the supports are advantageously placed on chairs and tables in the front part of the room instead of on the first row of desks. Sometimes one or more large objects are permissible in front. They may be placed below the eye or on the shelf above the front blackboard which is in some of the newer rooms.

In drawing from life the model is generally placed on a table. A large piece of white cloth placed behind on the wall makes the outlines plainer.

The schools have large and small geometric models. The large ones are on an average 4 by 8 inches; the small 2 by 4 inches. When the small ones are used six of a kind are placed about the room on the model supports.

In addition most of the schools have a set of about six Japanese vases.

Prang's and Poor's sheets of historic ornament are provided for grades 7 and 8.

HOLDERS are pieces of cloth board with leather corners and are to hold the sheet of paper while the drawing is being made. Some seventh and eighth grade rooms have drawing boards, which are used in place of holders for instrumental work.

¹ Charles M. Carter, art director.

Materials required for drawing.—Ask of the principal permission to see the printed form with the above title. Copy for reference the items and amounts to which you are entitled for the use of your pupils. Supplies are obtained by the principal who sends requisition to the storeroom.

Materials for drawing should be used for drawing only. Particularly does this apply to pencils. Brushes should be cleaned immediately after using and should be kept in something which will permit them to stand point up.

The purchase of water colors is not required of pupils. Boxes containing black or charcoal gray are most desirable. When the course of study specifies brushwork it may be done with ink if colors are not desirable.

Preparing lessons.—Generally the teacher should make at least a quick sketch of what she proposes presenting to the pupils. Lessons should not be given without preparation by the teacher.

Teaching.—Require the entire attention of pupils when teaching. Have their hands empty. Lead them by the exertion of their own powers to master each new subject. Remember that pupils must acquire true conceptions of what is to be done before expression.

Judging proportions.—Throughout the course it is of the greatest importance that pupils should study proportions, learning to judge the largest proportions first and others in order of size and importance. The extent to which this can be accomplished depends on the grade, but it is quite certain that in the higher grades the pupils should have acquired the habit of considering the following:

A—Distances, comparing.

Height with width.

Distances of a point from sides of drawing.

Distances of a point from top and bottom of a drawing.

Distances of a point from any two others on the same straight line.

B—Areas.

Where are areas similar in size in the subject?

What areas are similar in form?

What proportions have areas to each other?

The areas resemble what simple geometric figures?

C—Other considerations.

What points are in the same straight line vertically?

What points are in the same straight line horizontally?

What imaginary triangles would be formed by any three points?

What rectangle would be formed by any four points?

What lines, real or imaginary, give movement of parts?

What slopes have real and imaginary lines?

Where do produced lines cut the drawing?

First—Draw after judgment.

Second—Test by judgment.

Third—Test by mechanical means.

Pictorial drawing, notes.—Accustom the eye to take in the work as a whole. Frequently judge the drawing by viewing it at a distance when placed beside the objects represented.

In all free-hand sketching pencils are to be held as an artist holds a stick of charcoal. Models should be used invariably when the subject requires them.

In pictorial drawing have pupils draw what they see, not what they imagine.

The subjects should be placed in the same position at each lesson with great exactness until the representation is completed. Also, the arrangement of light should be the same.

The free-hand alphabet, notes.—The free-hand alphabet cards are in packages of 50. Principals are expected to order one package for each room filled with pupils of grades 4, 5, 6, 7, and 8. Pupils should be able to make these letters from memory.

The use of titles is left to the judgment of the teachers. Frequently they are not necessary. Generally they are most appropriate in connection with decorative and working drawings.

Titles, when used in connection with work of grades 1, 2, 3, and 4, may be written. The free-hand alphabet may be used, if desired, but the alphabet cards are not provided grades 1, 2, and 3, and, if used, must be borrowed from the higher grades.

Printing is not required on the back of drawings, but may be placed there for practice.

Horizontal guide lines are generally used in making words, but should not show in the finished drawing.

Names or initials of pupils on the front of drawings are not to rest on visible lines.

The free-hand alphabet looks best when made with a wide line. A blunt-pointed pencil should be used.

Pupils place the letters of words generally too far apart.

The letters may be simplified for the lower grades by leaving off the "serifs."

In the lighter grades of decorative lettering it is well sometimes to make wide-surfaced letters, using double lines, filling the interior by the brush with color.

Labeling drawings.—Working drawings may show, generally, on their face, by printing name of school, title, name of pupil. All other drawings or paintings are to show on their face the name or initials of the pupil only. On the back of such works write name of school, grade, title, and age. The size and position of the name or initials should be carefully considered with reference to the composition of the drawing or painting.

Special exercises.—Special exercises in connection with each grade are given. The idea is to obtain from each pupil an acceptable drawing or painting. If the first production is not satisfactory it is to be attempted again, and even a third time, if the teacher is not satisfied with the results. It is desired to cultivate, on the part of each pupil, persistence in doing the best of which he is capable. The work is to be judged rather by the effort it shows than its technical perfection. Pupils are now allowed considerable "freedom of expression." It is hoped that these special exercises will cultivate greater painstaking without in anywise restricting freedom. The best expression by drawing or painting is undoubtedly that which follows careful observation. Envelopes are provided for these exercises.

Illustrated booklets.—Collecting illustrations from newspapers and magazines and arranging them tastefully to represent some subject as "convergence," "model drawing," etc., have been found highly useful and are strongly recommended.

Picture study.—The following outline will suggest a definite manner of studying pictures, particularly the reproduction of works by celebrated artists which adorn several of our schoolrooms. Pupils should know about the pictures of their room.

Further hints may be obtained from "How to Enjoy Pictures," by Miss Emery, and "How to Judge of a Picture," by John C. Van Dyke. Each school is urged to form its own collection of reproductions of celebrated pictures. They may be mounted. Such collections are always interesting to visitors, and quickly tell of the extent to which pupils and teachers have interested themselves in art.

The following are some principles and considerations to be borne in mind when studying pictures:

The sources of picture making.

The human mind producing the conception.

Nature—which furnishes the materials.

What does the picture say?

What living or inanimate objects does it present?
 What are their characteristics, action, expression?
 What locality is represented?
 Time, point of view.
 Extent of realism, idealism.

How expressed?

By real or imaginative subjects, having in mind such principles as the following:
 Simplicity. Breadth. Repose.
 Unity. Harmony.
 Proportion. Equilibrium. Masses. Lines, relative tone values.
 Variety, how secured. Repetition.
 Perspective. Gradation. Subordination.
 Concentration. Definiteness. Contrast. Atmosphere.
 Color. Dominant, analogous, or complementary harmony. Warmth. Coldness.
 What mediums were used in producing the original picture and the duplicate? The first may have been in oil, water color, etc. The second a reproduction by engraving, photography, etc.

Who was the artist?

When and where did he live?
 Characteristics.
 Anecdotes.
 What other works has he painted?

Does the picture teach a lesson; if so, what?

Reiteration.

Write about the picture and the artist.

Collect and classify the works of the artist where possible.

SALT LAKE CITY, UTAH.¹

"Art and Construction in the Elementary Schools." General notes with charted outline.

CLAY MODELING.

Clay modeling and construction have the same educational advantages. Clay is building material and gives the child a chance to express his only knowledge of form—the facts of form. Representations on flat surfaces are learned and at best are only conventions. It seems better to allow young children to make the real forms and gradually lead them to conventional representation. Clay supplies the right means of doing this.

By working with clay one becomes acquainted with the bulk, substance, material or mass of the subject. He is dealing with tangible material that must be shaped from every side into the form he knows. This gives excellent drawing experience and his dealing with "stuff" or substance in terms of drawing causes him to think in terms of mass.

There are simple steps from modeling in the round to drawing on a flat surface. First there is modeling in half-round, then in high relief, which is a nearer approach to drawing but still a representation of bulk or substance, and finally, bas-relief, where one must still think of mass and inclosed substance, which is very similar to graphic representation on a flat surface. Although relief modeling is quite as conventional as drawing, yet the habit one acquires of thinking in terms of mass should cause one to express in terms of mass even though lines are employed.

Mass drawing is quite as much a mental process as a physical one. If the stages suggested for modeling be followed in water-color painting, keeping in mind the idea

¹ J. Leo Fairbanks, supervisor.

of colored bulk, and then is succeeded by charcoal mass, which represent color with a dark medium, the children should have little trouble with mass or even line drawing.

With clay, after the general size of the bulk has been shaped into action or direction, small unformed pieces are to be added in correcting the drawing and shaping the projections after they have been made part of the original mass. By adding or taking away pieces as necessary good results may be obtained.

Specimens worthy of preservation should be kept from each lesson. Some might be cast in plaster of Paris, or allowed to dry and be fired later. One cast is expected from each lesson in the grammar grades (two from a subject in relief—one for the school and one for the pupil).

The clay is taken care of by the janitor, who will supply at least 1 pound for each pupil every time the class models.

Small, insignificant models must not be allowed. Generally model on a base. When thin or slender figures are attempted in the round, wires should be used for supports. There should be few projections in modeling. Quick drying will crack the clay.

A damp cloth should be provided for each child so he can wipe his hands and wrap the model so as to keep it damp for another recitation. Oilcloth is very helpful in keeping the desk clean and keeping the dampness in the clay.

If the class is working in the round the position of the model should be changed frequently, so as to be seen from all sides.

Pottery is made by building and by coiling. Patterns should be made to determine size and shape before attempting it with clay.

CUTTING AND TEARING.

Free-hand cutting and tearing are excellent means of getting knowledge of form. To avoid mere outline it is advisable to do most of this work by snipping or cutting away from the mass. Continue to improve the suggested form by cutting away small pieces. Cutting to line or on sketched forms are helpful exercises.

PAINTING AND COLORING.

Water color should generally be put on with direct touch. Spots of white paper will show through the color if it is put on in the right way. Seldom should pupils work over and over wet color. Insist on pupils using much water so that color will flow or flood.

At the beginning of a lesson all pupils should moisten each cake of color. Taking color directly from the pans when small surfaces are to be covered will cause pupils to use less color and to paint in a direct way. Water cups need have but little color in them at the end of a lesson.

A pencil sketch is helpful in making a complicated water-color painting. The drawing should be sketched only. It is advisable to paint the lighter parts first. Parts that are to be darker can be painted with another wash to give them the desired tone.

Lines are most easily drawn by holding the brush at right angles to the paper and steadying the hand on the little finger. Framing should be done in this way. Poster effects are obtained by outlining the drawing with uniformly heavy color or pencil lines.

After each lesson the boxes and brushes should be thoroughly cleaned. Brushes should dry with the hair straight. New pans of color should replace those that are empty.

White should be used only for accents, for lines, or for letters of pure white on darker ground color. Charcoal gray or black is to be used only as a pure color and never to darken other colors. To darken a color use a combination of ultramarine blue, car-

mine, and sometimes a little burnt sienna. Yellow ocher is to be used for earth or ground color, flesh color, background, and tempered yellow skies. Yellow ocher combines with blue without producing a decided green, and the two in combination with red will produce most any color desired (depending, of course, on the amount of each color used).

Water-color work that is exhibited in the autumn should be protected from the flies.

Wax crayons should be used much like an ordinary pencil, with direct touch. Do not allow pupils to make a solid, closely filled mass of color. Use crayons for book-cover decorations.

ILLUSTRATIVE DRAWING AND COMPOSITION.

Mental images must be clear, else they can not be well expressed in visible form. Illustrative drawing helps to fix these concepts, trains in careful observation, develops imagination, and allows free and spontaneous expression.

The connection with nature study should be very intimate. Pupils should represent the great phenomena and passing changes of nature rather than analytical representation of small facts. Drawing may be used for recording facts, but this is not its great purpose. Landscape composition is particularly well adapted to nature illustration, but the suggestions should come from observation rather than from dictation.

After a story or description has been read the mental image should be clarified by recalling scenes similar to the one described. Combine the impressions and memories to form vivid pictures of the subject. (Imagination is entirely dependent on memory or combination of memories.) Dramatize the action or from the pose draw figures and add the environment.

Before objects are placed in a composition the sky should be colored down to the horizon and the ground colored up to the sky (allowing for difference in the tone of near ground and distant mountains). The proportional relations of people, houses, trees, buildings, and furnishings should be considered next.

In every grade the strong characteristics must be well drawn. Insist on well-proportioned figures whose limbs joint properly, trees that are solid and branch naturally, mountains that are characteristic of real mountains, houses with fairly true perspective, table line or distant level ground (horizon). If shadows are represented they should be more than dirty spots, and the color of the ground more than black spots under objects.

When the drawings are well underway some of the best should be exhibited and the good qualities pointed out or a demonstration given of the possibilities of some poorer pieces. When copies or illustrations are employed as incentives, great care must be exercised. If pictures are shown too early pupils are almost sure to reproduce them, because the latest and most vivid impression is that caused by the copy. Remember the purpose of illustration is to get the pupil to express himself.

When individual pieces are finished have the pupil draw marginal line around them and display them on the chalk tray. This exhibition is a healthy incentive for the class.

Aim to develop the imagination and fancy by seeing pictures in scribbles, somewhat as children see pictures in the clouds of the sky or in the glowing coals of the fire. Work these impressions into real images. Do not encourage vague, indifferent, or careless work, but allow the fancy to roam freely, and when it catches an idea, develop it as far as possible.

(1) Avoid two compositions in one picture. (2) The middle must be strong. (3) The interest should carry from one side to the other by balancing across the middle from the front to the back. (4) The principal center of interest should be at about

the intersection of a vertical and a horizontal line each passing three-fifths of the distance across the space. (5) Avoid uniformity and monotony.

Work in the first grade should be free and spontaneous, without much direction from the teacher. Some children naturally draw with lines. This must not be discouraged. After two months all illustrative drawings should be made within marginal lines. This aids the child in filling the space to better advantage and improving the composition.

In the second grade the majority of children draw in mass with a fair degree of color representation. Immediate observation of some active figure that represents some character, movement, or game will furnish ideas from which they draw from memory.

In the third grade the children should make their drawings to fill spaces of varying sizes and proportions. To perfect their drawing they should work from immediate observation and gradually will require objects before them.

In the fourth grade more attention should be paid to arrangement, placement, and representation. More time must be spent in object drawing and drill for illustrative purposes. In the grammar grades composition is studied more systematically in illustrating subjects taken from literature, etc. Principles of composition are to be studied.

DRAWING.

Drawing in the lower grades is pretty largely for illustrative purposes. As the child advances he realizes that his work needs perfecting. By seeing others work he is gradually led to pose drawing and object drawing.

In the grammar grades the subjects are chosen partly to help pupils learn principles of perspective, which should be written in the pupil's own language under the direction of the teacher. These principles are applied in their illustrative work.

Charcoal is to be used almost exclusively in the primary grades. It is easy of manipulation and trains one to think in terms of mass or body or inclosed substance. Because a pencil point is suggestive of line it is not favored as a medium before the fifth grade. Even then mass drawing is to be continued because the natural tendency with line drawing is to think of detail. Outlines cause children to look for trifling details in the contour and to forget the large construction. Accents on the edges of colored mass should not be considered outlines. Because charcoal admits of most any finish, it is adapted to any grade or age and is continued through the school course. Soft bread rolled into a dough ball is the best kind of charcoal eraser.

To overcome the halting, indirect way of drawing details rather than large characteristics, pupils should make sketches in a given time (2 to 5 minutes). After the sketch is made a few measurements and tests with horizontal and vertical pencil should be made in concert.

Sketching is the foundation of all work in drawing. One becomes more direct because of representing the whole before the parts. Immediately one must express the action. The right placement of large proportions is fixed, thus reducing the placement of perplexing details to a minimum. The eye is trained in quick and accurate perception, labored efforts are overcome, and memory holds the big impression while one works. Sketching does not preclude finish. Sketching makes the best finish possible.

Pencil tests are introduced in the fourth grade and are to be used thereafter. Measurements are always comparative and should be made only after the subject has been sketched. Horizontal and vertical pencil tests are the most satisfactory. A strip looped over the fingers and held in parallel lines is very helpful. The use of two strips of paper held at an angle so as to cover the edges or corners of the object to be tested is also a good device.

Shadows are as helpful in defining the shape of objects as the contour. They should be sketched while the original drawing is being made.

When corrections are to be made the right form should be sketched or indicated before the wrong one is erased. If a new drawing is to be made, pupils should make a fairly accurate sketch over the old drawing so as to correct mistakes and have a definite idea of the right form before making a new drawing.

When pupils have ability they should be allowed to draw in their own way. Right placement, good expression, and good perspective must be required of all pupils. Have a high standard but not a fixed one.

Blackboards should be used much by all grades. Excellent opportunities are afforded for giving directions to the whole class as well as criticism to the individual. About 15 per cent of the class should draw at the board every day.

Marginal lines are to be used only in illustrative drawing, or when only part of the object is represented, or when some of it is cut off by the outside limit of the drawing.

Subjects chosen for object drawing should be vitally interesting. Be sure they are large enough and near enough to be seen well by every pupil. Have them well placed on a simple ground and in front of a pleasing background. Take thought in arranging the group compactly, but do not waste time in composing it. Mark individual pieces of the group so that their positions may be easily located next day, if more than one period is spent in finishing the work.

A cardboard or compo-board, large enough to form a background from any position in the room, should be used in object drawing. Devise some means of tilting the ground so as to give the appearance of a surface below the eye.

Type solids may be drawn for experience and for learning their names.

At the close of the recitation all work should be collected and marked by the teacher. Later it will be returned to the pupils, who may make corrections and file the work in their portfolios.

Chalk and charcoal drawings should be "fixed" before they are returned to pupils.

Caricatures and funny subjects help pupils to be more direct, to express essential characteristics, to draw freely, to gain control of medium. They should be indulged in occasionally. Memory drawing helps to fix images in the mind and gives the hand control in reproducing mental images. Use it often.

In map drawing and in copying, the first effort should be to get the direction of the principal masses or to get the structural lines. Details take their proper places in the larger bulk without much labor. Copy work is not means of expression. It is helpful in gaining knowledge of technique or in securing another person's point of view and his ideas of essential qualities. When one copies there is nothing left to his choice because he simply reproduces.

As posed figures should represent some character or activity; they should always be doing something. The side or front view should generally be represented (the back view rather seldom). Pay attention to the proportions of the body, action of the figure, elbow joint, drawing of the foot, etc. A detail drawing of a shoe will be very helpful in drawing feet.

STEPS IN DRAWING AND PAINTING.

1. Decide on the size and placement on the paper. See that pleasing margins are left on all sides.

2. Sketch the general movement or direction of the object and indicate the larger proportions.

3. Test the relations of parts, the action or direction of the figure, points that are in the same vertical line and those that are in the same horizontal line, where projected lines and curves would cut more distant lines or edges.

4. Add essential characteristics and accents. Sign according to form.

PERSPECTIVE.

Definitions.

Line: A line is the distance between two points.

Point: A point is a mark, a stop, the end of a line, or place of intersection of two lines.

Surface: A surface is a bounding plane.

Edge: An edge is the meeting place of two surfaces.

Corner: A corner is the place where more than two surfaces meet.

Horizontal: Parallel with the surface of smooth water.

Parallel: Parallel means running or extending in exactly the same direction and everywhere equally distant.

Foreshortened: Foreshortened appearance is the apparent shortening of edges or surfaces due to the object being placed obliquely or parallel to the visual rays.

RULES.

1. The more distant of two equal lines or objects appears smaller.
2. A plane so placed that its center is at right angles to the visual rays is seen in its true or real dimensions; or planes and lines that are parallel to the picture plane are represented in their true dimensions; those that are not parallel to the picture plane are foreshortened and consequently present a distorted appearance.
3. A horizontal circle on the level with the eye appears a straight line.
4. A horizontal circle above or below the eye appears an ellipse whose long axis is horizontal and always the same length, while the short axis becomes shorter as the circle nears the level of the eye.
5. When one end of a cylinder appears to be a straight line, the other end appears curved.
6. When an end and a curved surface of a cylinder are seen at the same time, the end appears an ellipse.
7. The long axis of an ellipse is at right angles to the axis of the cylinder.
8. Elements of a cylinder are tangent to ellipses representing the ends. They do not come on the axis. (The same rule applies to the cone.)
9. Foreshortened parallel lines or edges appear to converge or approach each other at the farther end.
10. Horizontal parallel retreating edges or foreshortened lines appear to vanish at the level of the eye. Those above the eye appear to descend or vanish downward, and those below appear to ascend or vanish upward.
11. When two or more faces of a prism are seen at the same time, none of them can appear in its true or real shape.
12. If parallel lines or edges of a face of a prism vanish to the right, those on the left side vanish to the left.
13. Vertical edges are always represented with vertical lines.
14. The center of a horizontal circle does not appear to be equidistant from the front and back. (The apparent center is in the middle of the long axis which bisects the short axis.) It is therefore evident that the long axis does not coincide with the diameter of a circle.
15. The base of a foreshortened horizontal triangle is not bisected by the line representing the altitude, because the nearer half appears longer.

The rules should be discovered by pupils and formulated in their own words. Written statements, together with illustrative clippings, should be bound under the covers of "Art Booklet."

DESIGN.

1. Design is a term used to indicate the establishment of a relationship of mass or space. (Any relationship of spaces is more interesting than blank spaces.)
2. Balance is the equivalent of force, either through movement or attractive power.

3. Rhythm is continuous or joint action by line or mass.
4. Harmony is a consistency of relations.
5. Unity indicates strength or material attachment.

PRINCIPLES.

Good design is always orderly, calm, and respectful, clear in its expression, accepting quietly the limitations imposed on it by material, shape, etc., never making an undue plea for attention, satisfied with the surface it ornaments without attempting to represent reality or to deceive by making one believe it is something it is not.

A design must be made for use and not remain a paper pattern. It must be made to look fine and possibly beautiful, but always orderly and interesting.

Only those forms that are themselves decorative admit of decoration. Lowly objects should not seek elegant ornamentation. The extent of the decoration is governed by the service the object must yield. Necessity must govern design. Objects must demand the ornament and not appear to exist merely for the decoration. Structure determines the form of the ornamentation.

Simplicity is a virtue in design if the interest is maintained. There should be enough ornamentation to overcome the feeling of emptiness. Sometimes empty spaces are interesting if variety exists in the space relations. Shape should always be emphasized. Edges should not be crowded. There should be no diagonal lines or crosses to weaken the spaces. There should be no quantity of small equal masses, nor wide gaping spaces, nor weak, uncertain lines.

The pattern should be pleased with the space it occupies, should strengthen the natural growth points, angles, etc., and should betray the purpose of the object ornamented and its position whether to lay, stand, hang, or run. The background must always be considered with the pattern.

The beauty we give a design must come from within us. We make new combinations of known forms. Nature may stimulate and inspire but can not help us translate her beauty into design. We must take ideas to nature. Our own inventiveness will determine the worth of our designs.

Originality is in reality a combination of memories. The need of good examples to overcome recollections of bad ones is quite apparent. The teacher should be prepared with examples of good work, clippings, and board illustrations, so as to prevent a multiplication of errors. She should be able to consider the problem from the child's point of view, to determine the type of ornamentation, to reduce it to its simplest elements, to lead pupils to develop good arrangements so far as they are able to be original.

The earliest experiences must be simple and proceed from the known to the unknown. The first designs should admit of original arrangement under certain restrictions, as, repeating a form three or five or more times. (One in the center with one or more on each side.)

Conventionalizing requires much time, but the amount of convention often determines the value of the design. Natural elements should be reduced to conventional forms by making simple patterns with uniform lines rather than with the tremulous live lines of nature drawing.

Pupils should practice units with the brush, make silhouettes, strong dark lines, etc. Black and white is the severest test to which a design can be submitted, because of the uncompromising contrasts.

Class criticism should be in terms of design by giving reasons for likes and dislikes.

Unity leads the eye through all the details of a design and gives the pattern consistent repose.

Rhythm means joint action or movement and is secured by regular or measured accent, symmetry, balance of tone, line, or mass.

Harmony is uniformity, either in color, tone, mass, or detail. Incongruities may be harmonized by reducing them to nearly the same value or related measure.

WORKING DRAWINGS.

Working drawings are to be made as free-hand working sketches. The conventions of working drawings are to be employed, the relative proportions to be rightly represented, and lettering neatly done. Girls should have experience in making working drawings as well as boys.

In the primary department problems are solved by making paper patterns. In the grammar grades paper patterns are made before the object is constructed in more enduring material.

Letters must have uniform slant, height, and space. Before being drawn they should be lightly sketched to secure uniformity. In printing titles, etc., a copy should be printed on scratch paper and held over the space where the title is to be printed, so that on the cover paper, letter by letter can be reproduced from the copy, which is adjusted to the right position.

PICTURE STUDY AND STORIES OF THE LIVES OF ARTISTS.

The purpose of picture study is to acquaint pupils with masterpieces that are recognized by competent judges, to interest them in American art, and to know how to judge pictures, sculptures, architecture, and design.

Reproductions of sketches made by great draftsmen, with mediums that the children use, should be available for study. Great artistic products are thought out by means of sketches which are usually the spontaneous and best thought of the artist.

Study systematically the pictures, statues, and other collections that belong to the building.

Good collections of illustrations would be valuable for study.

Appreciation should be the keynote of picture study. Description, meaning, history of the picture, and biography of the artist are important features, but must be used to understand the picture (not taking the place of a genuine study of art form).

Preparation is necessary; teachers must be ready to lead and to direct; pupils must be ready with interest in the picture.

Interpret the picture. Eliminate irrelevant matter. Avoid asking too many questions and asking concerning minute details. Let your attitude be one of sympathetic appreciation. Children should feel at ease and ready to communicate their ideas. Exposition is out of place. Do not impose your ideas.

Develop the study of pictures by the following steps:

1. By asking leading questions, as follows:

- A. The thought the artist aimed to present; the soul of the picture
- B. The artist's ideal.
- C. Wherein does the beauty of the picture consist?
- D. How far is the scene real; how far is it idealized?
- E. Setting of the picture; city or country; indoors or outdoors.
- F. Center of interest, or main point; composition.
- G. Source of light.
- H. What is told of action or facial expression in the living forms?
- I. What is told of textures?
- J. What is told of natural phenomena, storm, wind, sunshine, temperature, etc.?
- K. What reminder of personal experience is suggested?
- L. What have you to bring to the picture from your own knowledge of what others have said or written or printed or sung?
- M. Title; interpretation.

N. Technique; how was the original picture made; by what process is the reproduction made?

O. A picture shows but one moment of time, What is suggested, therefore, of past or future by this picture?

P. Memorize the picture.

2. By giving information concerning the picture.

3. By relating incidents in the life of the artist.

Is there something about the picture that can not be expressed in words? Is that the quality that made it necessary to express it as the artist did? If so, you may be sure your study is about right. Hang the picture before the class and let it tell its own story.

AESTHETIC CULTURE.

Subjects are to be considered that will lead to thinking of making a beautiful city, taking interest in civic improvements, making the environments more agreeable, and giving thought to simple personal adornment.

Beauty should be manifest where our civilized communities are housed as well as in the fields where dumb beasts live.

Compositions are to be written for language work and preserved under the cover of the art booklet.

PREPARATION OF TEACHERS.

Preparation is an index to success. It shows what the teacher will approve, what she is striving for, her progress, and gives an opportunity to receive suggestions that will be for personal advantage as well as for the good of the class. Preserve in a portfolio, as standards, the preparations, clippings and drawings from other children.

It is the teacher's business to help the child gain more skill and to produce better work than he could do alone. To accomplish this she should know how to do it by actually producing it before exacting it of the class. Art is not a special subject. Every teacher is expected to teach it. Special talent is not essential to realize the democratic purpose of art in the public schools.

Technical processes require demonstration. The teacher must be able to do the work and have the class imitate the movement until all can do it. For manual operations there is generally a way of doing it, but for the process of expression there are many ways. It would be well to show more than one way when expression is required.

PUPIL'S PREPARATION.

It is important that pupils know what they are to do for the next recitation. They can make home preparation or at least prepare mentally by making observations.

Teachers will see that pupils come to the required standard in drawing so that they can do the work in hand.

RECITATION PERIOD.

If everything is attended to with dispatch, the periods are sufficiently long to do the work.

No more nor less than the allotted time is to be given to drawing.

Time for distributing material should be reduced to a minimum. Choose many businesslike helpers.

Introduction is to give information and to connect with the previous lesson.

Consider subject matter by leading questions that help pupils to discover facts. Be brief and to the point.

Short drill will help pupils to control muscles and secure ease of execution. Concert work in tests should be given after the subject has been sketched. Free individual expression should follow.

Give individual help where needed. Original expression without some technical ability should be avoided. Technique requires demonstration and should be illustrated in a brief way.

Work should be done with feeling and reverence. Show work cheapens art and our respect for it. Teacher's place is where she can oversee work of the whole class. Pass around rapidly and direct where instruction failed. When you help a pupil, show him and the group around him how to do the work, but avoid working on his product. Let it be his own. During the progress of the class, give class criticisms and have pupils suggest remedies and point out good qualities of work that is held up for criticism, always for improvement rather than finding fault. Show best work during the recitation as a suggestive means of improving poorer work. In the criticism, lead pupils to discover their mistakes and to correct them. Encourage thoughtful work, even though it be below standard in execution. Lead pupils to get individual point of view.

Signatures are to be in the lower right-hand corner only. The name should be printed and followed by the date, abbreviated in Arabic numerals. On the next lower line the name of the school and the grade, printed with a Roman numeral. If pupil's writing is poor have him sign on the back. All clay models should be signed.

Assign work for next lesson.

All work should be collected, stored, marked, and later returned to pupils, who preserve it in their portfolios.

Exhibit the work of the class for encouragement.

FINISHING AND SAVING THE WORK.

One finished product is required of each grammar grade child each week. Preliminary sketches, drills, etc., are to be made in the allotted time.

In one minute the drawing should show direction of the figure or group; in five minutes it should be carried a little farther. This kind of work will help to establish the large proportions and overcome the indirect, pattering way of drawing.

Skill and freedom are acquired by practice and sometimes by painstaking effort. Conscious effort is expected in the grammar grades, but labored effort is not to be encouraged. The work should be done with dispatch but not with carelessness.

Good drawing and vigorous execution must always be encouraged. Finish should not be sought at the expense of thoughtful drawing.

Do not accept all products as the child's best effort. He must put thought into his work. Drawing requires one's soul and should not be cheapened with great haste.

At least 80 per cent of the work should be well finished before the recitation can be considered successful. This high average should maintain through the year in every grade.

Insist that everything shall be well done. Instill the idea that what one creates lives after him, and should be at least so well done that all will respect it.

In the primary grades six samples of work from each subject must be saved for inspection. Keep specimens of the best and poorest work and also some on which special help is desired. In the grammar grades the work is to be preserved in the pupil's portfolios.

Two samples from each subject must be left in the principal's office each week. These will be used for standards in the building or in the files of the supervisor, or for special exhibitions. The work must always be the child's own honest effort.

DISPLAYS.

Exhibitions afford opportunity for measuring one's achievements or give inspiration by showing what others can do.

A means of displaying work in the room is furnished. Every teacher is required to exhibit the best work and occasionally the work of the whole class. Each recitation

should add many specimens of worthy work for exhibition. Most of them will require trimming.

Do not exhibit always the work of those who are specially gifted. The display is not for show but for encouragement.

The work of putting up and taking down exhibitions should be assigned to pupil committees.

The use of pins, paste, tacks, or nails is prohibited.

Six gray cards 22 by 28 inches are furnished each room. These cards are to be fastened together by means of three pieces of tape $6\frac{1}{2}$ inches long. On the two opposite sides of each card and parallel to the long edges, cut three slits—one in the middle, the others 5 inches from the ends. All are to be five-eighths of an inch from the edge. The tape should be put through the slits in the upper edge of one card and the lower edge of another. The ends of the tape will be sewed together to form a loop. The cards are to hang in series of two, three, or four, according to the width of the space between the molding and blackboard. The hangers are to be of the same length and arrangement as the tape between the cards. The display will be fastened to the cards by means of small pin-fasteners or staples. No paste is to be used on these cards nor are the fasteners to be clinched.

Uniformity in the cards is desired so as to assemble them for building displays or for special exhibitions.

BOARD DRAWING.

Each teacher should put a new drawing on the board every month. When mass drawings are attempted they should be "positives," or in other words, the white of the copy should be white on the board, and the dark represented with the dark board, and black represented with black or charcoal. If line drawings are made the chalk should be employed in the manner of the medium from which the copy is made. Select subjects with character rather than picture-card or chromo effects. Elaborate subjects should not be attempted. Limit the drawing to about 24 by 36 inches.

Room ornaments of material form, as leaves, fruit, flowers, festoons, bunting, etc., should remain during the appropriate season only.

Flowers, vases, draperies, etc., as well as good arrangement of books, written work on boards, drawings, displays, etc., make the room cheerful and inviting. Have pupil committees attend to this work.

Art and construction in the elementary schools Salt Lake City.

Subjects.	Grade I. 25 minutes per day.	Grade II. 25 minutes per day.	Grade III. 25 minutes per day.	Grade IV. 25 minutes per day.	Grade V. 30 minutes three times per week.	Grade IV. 90 minutes per week.	Grade VI. 90 minutes per week.	Grade VIII. 90 minutes per week.
Construction and weaving.	Dolls, toys, fur- niture, for play.	Paper construc- tion, raffia weaving for use and for play.	Textile and string, for service.	Community prob- lem, rug cro- cheting.	Cardboard work. Bookbinding.	Manual training.	Manual training. Leather.	Manual training. Metal.
Modeling and pottery.	In the round. Illustrative.	In the round and very high relief for illustrating.	Relief. Pottery.	Relief. Incised pottery.	Low relief. Tile.	High relief. Pot- tery, inlay.	Figures in the round.	Relief of head.
Painting and col- oring.	Wash painting for illustrating primary col- ors.	Wax crayons, monochrome wash. Illustra- tive.	Landscape wash. Wax crayons.	Object painting in simple tones. Monochrome.	Direct painting. Pose. Second- ary colors.	Still life. Simple wash tones.	Sketch technique. Harmonies.	Values. Color theories.
Illustrating and composition.	Stories and games. Marg- inal lines.	Stories and games. Large figures.	Stories. Place- ment. Space fill- ing.	Arrangement, mounting and trimming.	Placement, unity, balance, oppo- sition.	Rhythm.	Variety Har- mony.	General principles of composition.
Drawing and per- spective.	Action. Char- coal and blackboard.	Houses, trees, ho- rizon. Black- board.	Figures in action. Mountains.	Object drawing. Technique. Memory.	Circular perspec- tive. Sketch- ing. Technique.	Parallel perspec- tive. Still life. Memory.	Constructive drawing. Char- acture.	Sketching with pen and pencil for technique.
Design.	Repeats and rhythmic border.	Repeats, spots for borders.	Figure repeats.	Corner unit and connecting lines. Covers.	Corner unit. All- over patterns. Interlaced lines. Block print.	Monogram. Bor- der lines. Space relations. Stan- dard.	Space filling, em- phasizing direc- tion. Book- plate.	Pierced metal. Modified spaces. Poster.
Working draw- ings.	Folding.	Folding. Cutting— letters.	Lettering.	Sketch of rug.	Cardboard con- struction. Con- ventions of working draw- ings.	Simple letter forms.	Purse. Roman letters.	Buckle. Lamp shade.
Planning and patterns.	Toys.	Toys.	Pottery.	Pattern for rug.	Pottery.	Pottery. Book- binding.	Purse and book- cover.	Lamp shade.
Picture study.	Millet and Mu- rillo.	Raphael and Landseer.	Bonheur. Swan. Barge.	Michael Angelo and Italian art.	French. Corot, Millet, Rodin.	English and Span- ish. Turner, Vo- lterra.	Dutch and Ger- man. Durer and Rembrandt.	American and Jap- anese. Whistler, Mt. Gaudens, Ab- bey.

Aesthetics.	Personal cleanliness.	Clean clothes, playthings.	Yards, walks, home.	Playgrounds, public places, fences. Place for everything.	Flowers lawns. Presents.	Streets and architecture, simplicity and beauty.	Good taste in personal adornment. City beautiful.	Posters. Home beautifying.	Shops.
Historic ornament.				Egyptian and Indian.	Greek and Roman.	Romanesque. Saracenic.	Gothic and renais- sance.	Modern home Japanese.	

LOS ANGELES, CAL.¹ (CITY SCHOOL DISTRICT.)**The Course in Drawing in Elementary Schools.**

The purpose of art education is to develop the power of appreciation. We do not aim to make artists of our pupils, but we believe that only through practical experience in drawing and painting can they acquire observant, discriminating, and intelligent eyes. The child in his effort to create gains a knowledge of what is good in shape, space filling, and color. If art is to enter into his actual life he must be encouraged to apply these principles not only to his drawings, but to practical affairs. Because of his tendency to overelaboration the value of simplicity in environment and personal expression must be emphasized. A most important line of work in the drawing course is composition or design. We begin composition in the lowest grade, as there is opportunity even in a little child's work for individual selection and arrangement. In every grade, in every lesson, the pupil should be allowed to exercise his individual choice as far as possible that the work may be more than mere imitation. We strive to develop the pupil's initiative rather than to force our standards upon him.

The problem of unifying the drawing with the other subjects in the curriculum is carefully considered. As the year's program develops the drawing is used to supplement and illustrate the subjects under consideration, the course being modified to suit various conditions. The invention and imagination shown by the children in their illustrative drawings are ample compensation for the lack of technique.

FIRST YEAR.

Illustrative drawing.—This gives an opportunity to utilize, in the schoolroom, the observations and experiences gained by the child in the outside world. The personal expression of the child is what we value rather than scientific accuracy. Let the work be spontaneous, but gradually correct false impressions. When possible precede the actual drawing by dramatic action. The reading, literature, and manual work continually suggest subjects for illustration.

Pose work.—Draw from the model. Teach back view, front view, and side view. Draw children running and jumping.

Landscape.—Simple studies of sky and sea and ground. Study trees. The pose and landscape lessons are given in connection with and to strengthen the illustration.

Nature work.—Draw flowers, leaves, fruit, grasses, and weeds.

Still life.—Draw toys.

Design.—Develop rhythm and repetition. Make simple borders for rugs and hammocks.

Color study.—Teach the spectrum colors, using the prism. Use colored crayons or water colors in the study of plant life, landscape, and illustration.

Picture study.

SECOND YEAR.

The outline is similar to that of the first year, but calls for better form and rendering.

THIRD YEAR.

Continue the illustrative drawing, the pose, and landscape work begun in the previous grades. Frequent reference to good pictures and to the model is necessary to improve the quality of the work. The course in literature and reading is full of material for illustration.

Nature study.—Use pencil, ink, and water color in representing flowers, fruit, vegetables, weeds, and grasses. Emphasize careful placing and good space filling.

¹ May Gearhart, supervisor.

Still life.—Draw toys, hats, caps, Japanese lanterns, and simple kitchen utensils.

Design.—Develop rhythm and repetition. Give opportunity for individual choice, selection, and invention with a few lines. Make simple borders and surface patterns, using brushes and crayons, or printing with corks. Apply designs to book covers and to other models made in the manual work.

Picture study.

FOURTH YEAR.

The illustration of stories selected from the reading and literature continues.

Pose.—Draw children from the model. Collect pictures of Greek heroes, Indians, and historical characters to be studied and drawn in connection with the literature.

Landscape.—Collect interesting pictures. Discuss shapes and space divisions. Make simple compositions, using pencil, ink, and water color.

Still life.—Draw hats, caps, tools, and simple kitchen utensils.

Nature work.—Draw sprouting plants, budding twigs, flowers, and fruit on the branch. The shape of the paper used should suggest the model.

Animal study.—Bring a bird, a rabbit, or any pet to school for the drawing lesson. Use pencil, ink, and water color. Study pictures of animals.

Design.—Place simple designs within a circle or a rectangle. Secure good space divisions. Plan borders and book cover decorations, using animal forms. Make Greek borders and Indian designs to be placed on covers for illustrated stories. Plan designs for lanterns, shades, boxes, and other articles made in the manual work.

FIFTH YEAR.

Nature work.—Draw and paint flowers, fruit, and vegetables. Make decorative panels of weeds, grasses, and seed pods, using crayola and water color, striving to show interplay of bright and dull color. Secure interesting arrangements and space divisions.

Pose.—Collect pictures to aid in posing the model. Draw from pictures. Plan decorative studies to illustrate the literature of the grade. Use pencil, ink, crayon, and flat tones of water color.

Landscape.—Similar to that of fourth year.

Design.—Rosettes, borders, and all-over patterns. Plan patterns for vases and bowls and apply simple decoration. Make a special study of the pottery and decoration of the Indians of the Southwest. Print borders and all-over patterns, using potato blocks.

Color.—Teach the neutral scale and corresponding scales of color.

Picture study.

SIXTH YEAR.

Nature work.—Leaf perspective. Draw flowers, fruit on the branch, and common weeds, placing the studies within a frame. Secure interesting space divisions. Much of the work will be decorative in treatment. Use pencil outline, ink silhouette, flat tones of charcoal gray, and simple color schemes in water color and crayon.

Pose.—Continue the work of the fifth year. Work in light and dark and color.

Still life.—Study the perspective of cylindric objects. Draw common objects singly and in groups. Collect pieces of interesting pottery to draw. Secure good compositions. Finish in flat tones of gray or use a simple color scheme.

Design.—Teach balance and rhythm. Make designs within rectangles, using straight and curved lines. Make all over patterns, using straight and curved lines. Make patterns, using abstract spots. Work from nature to the abstract. Plan designs for the clock cases and boxes made in the sloyd rooms. Plan designs for table covers and bags made in the sewing classes.

Color.—Teach complementary colors. Find examples in fruit, flowers, landscapes textiles, and pictures.

SEVENTH YEAR.

Nature work.—Continue the work of the preceding grades. Express in line, dark and light and color.

Still life and perspective.—Study of cylindric and rectangular objects. Draw books and boxes at different elevations and angles. Discuss pictures of streets, houses, and interiors. Formulate simple rules and definitions. Draw simple groups of common objects. Apply grayed harmonies of color using water color and crayon.

Color.—Use contrasting and analogous harmonies and monochromatic scales. Study color schemes in nature, in textiles, and in the colored prints by Howard Pyle, Jules Guerin, Maxfield Parrish, Jessie Wilcox Smith, and other good magazine illustrators. Compare reserved color schemes with those in full intensity.

Landscape.—Exercises in regular and irregular spacing. Collect pictures illustrating repetition, subordination, and balance. Apply exercises in space division to simple landscapes. Select compositions from landscapes, using the finder. Work in line, dark and light and color. Relate the landscape work to the literature.

Design.—Arrangements of abstract lines and spots. Designs based on flowers, pods, leaves. These designs are applied by means of stencils and wood blocks to book covers, cushion covers, curtains, needle books, bags, and other articles of use in the school and the home.

EIGHTH YEAR.

The outline is similar to that of the seventh year.

SAN FRANCISCO, CAL.¹

Course of Study in Drawing.

The course of study in drawing constitutes the minimum quantity of work required, and is planned more in accordance with what the grade teacher is prepared to follow successfully, than with the pupils of a particular grade are able to accomplish.

The course is arranged so as to keep the thought and attention of the pupils concentrated on all the topics of pictorial representation during one term and on all the topics related to design during the other term of the year. And in all grades the pupils are kept on a particular topic until the principles involved are understood. We avoid as far as possible any disposition to make drawings which are forced results, and never vary the character of the lessons from time to time by having a lesson in illustration follow a lesson in plant drawing, which in turn is followed by another in applied design. Each topic consists of a sequence of exercises which progress from very simple beginnings to a finished product, and the grade teacher is expected to teach the drawing as he teaches other subjects, by being thorough with each exercise. Our aim is to teach principles, train pupils to work out definite problems of the subject, and express themselves graphically, utilizing their own ability independently.

PICTORIAL REPRESENTATION.

Spontaneous story-telling—Grades I, II, III.

Drawing of plant life—All grades.

Drawing of still life:

Grade V. Fruits and vegetables.

Grade VI. Single objects based on cylindrical perspective.

Grade VII. Single objects based on angular perspective.

Grade VIII. Groups of objects including the models used in Grades V, VI, and VII.

The drawing of still life includes the study of perspective and light and shade.

¹ Katherine M. Ball, supervisor.

DESIGN.

In each grade above the second a particular problem of abstract design, embodying definite principles, is taught and subsequently applied to some practical use. As the course of instruction does not contain any so-called mechanical drawing, every opportunity is embraced to utilize mechanical processes and devices in the exercises in design. The compass and ruler are in constant use and every possible attention is given to measuring for accuracy.

Problems for the Grades.

Grade III.—Repetition of simple straight line shapes in borders adaptable to rug weaving and cross-stitch embroidery.

Grade IV.—Paralleling geometric figures; banding different shapes and adding corners and center spots as decorative motives, adaptable to the decoration of cardboard objects made during the handwork periods.

Grade V.—Radial symmetry in squares, using straight line arrangements suitable for tiles, and subsequently repeated in borders and surface patterns, which in turn are made to decorate book covers and portfolios.

Grade VI.—Radial symmetry in circles, using straight and curved lines, producing patterns which may be applied to such circular objects as mats, candle shades, plates, etc.

Grade VII.—Bilateral symmetry in units of design, expressing principles of radiation and graduation, which are to be used as repeats in borders and surface patterns, adaptable as decoration for textiles, book covers, portfolios, etc.

Grade VIII.—Interpretations of natural forms, mainly floral, suitable as units of design for repeats in all kinds of patterns.

In addition to the above, different topics of both pictorial representation and design are assigned to teachers, or even to whole schools, where conditions are conducive to unusual interest and exceptional effort. These topics include pose drawing, landscape composition, floral composition in notan, artistic lettering and design for basketry, rugs, pottery, and bookbinding, using natural geometric and symbolic motives for decoration.

HIGH-SCHOOL COURSES AND OUTLINES.

Three factors determine largely the character of work outlined in high-school courses: The training and qualifications of the teacher, the school equipment and classroom facilities, and the locality in which the school is situated. Lack of knowledge or art-school influences may induce a teacher to confine the work to one narrow field; poor and inadequate equipment may compel adherence to a particular phase of the subject; or an industrial, residential, or other neighborhood may suggest one or more lines of direct application within limited fields.

The wiser teacher, taking all things into consideration, notes these factors in outlining the school courses, and plans accordingly. The fact that the work may be elective, or otherwise, must also be considered.

In addition, the teacher, having drawing only to look after, seldom plans more than a general outline. The courses which follow, therefore, are much more brief than the detailed weekly programs of the grades. They are, however, typical of the more advanced attitude toward secondary school work.

The following cities are represented by high-school courses: New York, N. Y.; Schenectady, N. Y.; Newark, N. J.; Port Deposit, Md.; St. Louis, Mo.; Los Angeles, Cal.

NEW YORK, N. Y.¹

Syllabus for High Schools. Freehand Drawing.

FIRST YEAR.

REQUIRED WORK.

Design.

Subjects studied.—(1) Simple lettering in its application to cover, page, poster, or card arrangements without decoration.

(2) Principles of decorative design in two dimensions and surface enrichment for patterns related to special "center" to be developed.

Methods of study.—Lettering: The ability to letter with precision, clearness, and ease should be acquired by every pupil. A plain, well-formed alphabet of Gothic capitals should be learned.

Fine card or page arrangements depend upon the happy proportion of margins, page, and lettered area. This last area must again be separated into well-related parts for possible title, initials, decorations, and text.

Decorative design: Design is first an arrangement of masses. These masses may be further subdivided. The forms and relationships of these masses and their parts and the several kinds and directions of lines should be studied and experimented with. By such experiments abstract units and other decorative forms may be obtained. Masses, lines, or units in balanced or rhythmic relations produce borders, inclosed decorations, or continuous surface pattern.

Simple conventional forms of bud, flower, leaf, or fruit should follow the use of abstract units in more advanced problems of a like nature.

Required sheets.—Eight carefully-finished designs, well mounted and lettered with appropriate distinguishing titles, should be made during the year by every pupil. These mounted sheets should measure, complete, about 10 by 14 inches.

These eight required sheets are left, as to their subject matter and general treatment, to the guidance of the teacher. They should illustrate adequately the foregoing required instructions, however, and be ready for inspection when desired. Such work is to be selected from the regular class work of each student for the year, and under no circumstances is it to be produced under forced or special conditions or worked up and recopied from hasty sketches for exhibition purposes. An honest estimate of each pupil's ability as shown in his regular finished work is what is desired.

Preservation of drawings.—Each pupil should preserve his drawings individually in a folder or portfolio. He should be led to take pride in the completeness and excellence of the set. Each set should be neatly lettered with the student's name, grade, plate number, and date.

SECOND YEAR.

REQUIRED WORK.

Representation.

Objects to be studied.—(1) Cylinder, cone, sphere, their parts or combinations. Common objects of allied shapes showing foreshortened circles, such as jars, vessels, vases, barrels, pails, dishes, utensils, etc., including such important details as lips, handles, and feet.

¹ Dr. James Parton Haney, director.

(2) Cube, prisms, pyramids, their parts or combinations. Common objects of allied shapes, showing foreshortened straight-edged forms, such as books, boxes, tables, chairs, cabinets, etc.

Methods of study.—Drawings are to be made from actual objects in various positions and at different levels, both below and above the eye.

Study of single objects should precede groups. Drawings should be made in properly accented outline. Precision of form, correct perspective, and construction should be diligently studied and preserved.

Memory drawings of the foregoing objects in the various positions should be constantly made and ability developed to draw them from description or dictation.

Required sheets.—Twelve well-finished sheets, measuring about 10 by 14 inches, are expected from each pupil at the end of the school year for inspection, together with such practice or other sheets as may be related to the same. These sheets are not to be especially prepared for this purpose, nor redrawn and elaborated under forced or unusual conditions from incomplete or unsatisfactory sketches or material. They are to be selected from a larger assortment of regular year's work of the student, to serve as a standard of fair judgment of his ability.

Materials.—Pencil, crayon, or charcoal.

Preservation of drawings.—As stated under design, first year.

THIRD AND FOURTH YEARS.

GENERAL RECOMMENDATIONS.

The student will, at the beginning of the third year, elect either design or representation. The subject elected will be pursued throughout both years.

REQUIRED WORK.

Design.

Objects studied.—The general field of design touched upon in the first year should be intensively developed during the third and fourth years. The work should include:

(1) Designs for objects of three dimensions where these may be desirable in connection with the "center" to be developed.

(2) Surface enrichment of a more advanced type than previously studied.

(3) Advanced lettering and arrangements for books and allied subjects.

Methods of study.—Constructive design: The principles of design as related to construction are to be diligently studied and applied in the constantly enlarging circle of possibilities that opens to the student. The effect of technical methods, of structure, and of different materials on design, as well as the necessity of the use or purpose of the object controlling its form, must never be lost sight of. Examples of the best historic and modern design should be shown in prints or other reproductions, and wherever possible in actual objects. Articles of distinct interest connected with the student's life should form the subject matter of the course, and the products should, so far as possible, have a value to the student outside the mere study put upon it.

Decorative design: Design for the flat or for surface enrichment should proceed during this course with the production of patterns for use in leather, textiles, sheet metal, wood, etc., in their simple forms. The best precedents in each of these crafts should be adhered to by the teacher, and precision of workmanship, distinguished by simple motives executed with great care, should be encouraged instead of attempts at marked originality of elaboration.

The importance and prevalence of conventionalized forms in design should be taught and the subject developed and practiced in simple forms in the above problems.

The "center" chosen may be different from that followed in the first year.

Lettering: In the field of lettering the development of good alphabets should be a basis for advanced problems for covers, pages, posters, cards, announcements, book plates, etc. Such work also should combine with preceding decorative problems in a variety of ways.

Required sheets.—The finished work of these two years should include eight sheets as a minimum requirement.

Treatment of home interiors furnishes a variety of problems, first, in schemes of spacing and color for the inclosing surfaces of the room; second, for the furniture; third, for the hangings and smaller useful articles.

Representation.

Objects studied.—Advanced representation in the third and fourth years should cover the subjects of still life; nature forms, including fruit, flowers, vegetables, botanical and biological specimens; casts of historic ornament or the antique. The mediums employed may include pencil, charcoal, crayon, water color, or ink.

Methods of study.—The study of advanced representation should be pursued with a greater appreciation of and more earnest effort to excel in careful draftsmanship, truth of values, correct rendering of color, and, in general, a more mature and sympathetic treatment of the subjects than was possible in the previous course. Examples of masterly drawing by artists or students, in originals or reproduction, should constantly be in view as incentives to high technical efforts.

Required sheets.—The two years' work in this subject must produce eight large, well executed sheets as a minimum requirement.

Preservation of drawings.—Drawings in either of the courses of the third or fourth year should be preserved, mounted, and lettered generally as specified under first year's work. The advanced nature of the later work, however, should be evidenced in the greater care and refinement of its final presentation.

ETHICAL CULTURE SCHOOL, N. Y.¹

The Course of Study in Art.

HIGH SCHOOL.

Courses offered.—All the art work in the high school is elective, and three separate courses are offered, namely, the regular art course, the series of illustrated art talks described under the heading "Art appreciation," and the college preparatory course in freehand drawing. There is therefore provision for meeting the various needs which depend upon the temperaments, abilities, and plans of the pupils for the future.

Purpose of the regular art course.—The regular art courses provide for those who are interested in the actual practice of drawing, painting, modeling, and design in its various forms, whether or not the pupil hopes to carry on these studies afterwards. For the few who will continue their studies in the art schools the work serves to lay correct foundations. For the others to whom art will be but an avocation, or even a matter of general interest, the course aims to give high artistic ideals, the ability to observe carefully and to look for beauty, and an understanding of craftsmanlike methods of work. There is no way so sure of acquiring the power to appreciate the best in art as through carefully guided practice combined with the study of fine examples. Through even a limited practice of the artist's craft an understanding of his language is acquired and some insight of its possibilities and limitations. Thus is bred an interest in and admiration for fine accomplishments that no mere looking at art objects can bring out.

Purpose of art appreciation course—For whom intended.—The course in art appreciation is open to all high-school pupils. For those taking the regular art courses it

¹ Planned by James Hall.

is intended to supplement the technical study. It also aims as far as is possible to provide for those pupils who are not sufficiently interested in the craftsmanship of the subject to elect the regular art courses, but who wish to know about works of art and to appreciate them.

Course in photography.—A course in photography, although independent of the art department, offers another avenue of approach to the study of art, including, as it does, constant consideration of the fundamental principles of artistic composition and good craftsmanship.

REGULAR ART COURSE.

This course offers three years' work.

ALPHA.

The course.—The subject for the year's work is representation or the recording of the appearance of objects in pictorial form. The course includes the study of freehand perspective, some figure and landscape sketching, and the drawing of flowers. Throughout stress is laid upon composition.

Still life.—The work begins with drawing in pencil outline from the object of the simplest forms of still life, singly and grouped. Such subjects are taken as the various fruits, interesting dishes and vases, books and other common rectilinear objects. The purpose of beginning in this way is first to review thoroughly the pupils' knowledge of object drawing, and, second, to lay a new emphasis upon technical beauty and the artistic expression by line of solidity and texture.

Composition.—Following the outline drawing the study of dark and light composition within rectangular spaces is taken up. As an introduction to this study the pupils make outline tracings from a variety of fine examples of painting as shown in monochrome reproduction. These tracings are then converted into two values and then three value compositions. The pupils in this way learn how to translate or simplify the pictures of many gradations or values so as to retain the character and effect of the principal masses, employing either dark and light alone or introducing a middle value with the light and dark.

The aim of this exercise is to lead to an appreciation of the beauty that results from an artist's arrangement of his main masses or his "spotting" of a composition. The pupils then apply this knowledge by efforts in making pleasing arrangements of value from their original still-life drawings. In such work they are left free to place the values entirely for the best effects of composition, independent of the facts of color value in the actual objects. No light and shade is attempted, the different values being used to give the effect of flat contrasts of various colors. Principles of composition, such as unity through principality, balance, harmony, and rhythmic variety, are incidentally discussed.

Figure sketching.—Sketching the figure in outline and in silhouette occupies a series of lessons, emphasis being laid on the action and general proportions of the mass, and the making of a picture by composing one or two figures within a rectangle. The pupils take turns in posing for the class, and occasionally a pupil from a lower grade poses in festival costume. In connection with this work, excellent examples of figure drawing are shown, discussed, and sometimes copied.

Landscape.—A few lessons in landscape are given either in the fall or spring, beginning with the study, simplification, and rearrangement of such compositions as those of Turner, Corot, Alfred East, and other masters. One or two sketching excursions to Central Park follow where studies are made which are afterwards used in original compositions.

Flower drawing.—Lastly come some work from sprays of leaves and from flowers, which give special opportunity for the study of grace and beauty of line as seen in the

poses or gestures of branches and stems and in the turns of leaves and petals. The perspective principles studied at the beginning of the course in the more rigid forms of still life are applied now to the subtler forms of nature. Flower compositions are finally made within spaces, first in values and then in color. Here definite notes of related or of complementary colors are used.

Modification of the course.—While this is the outline of work generally adhered to, modifications are made in the plan when there are good reasons for doing so. For example, at the time of preparing for a festival, the class as a whole may work out some large scheme of decoration (see general statement), or at Christmas time one or more lessons are usually devoted to the making of cards of greeting.

BETA.

The course.—The subject of the year's work is design, with practice of some of the simpler crafts, including pottery and block printing or stenciling. Through practical problems and a minimum of abstract exercises the pupils gain knowledge of planning borders, designing for inclosed areas, and the making of surface patterns. Incidentally the principles of design, balance, rhythm and harmony of lines, of values, and of color and the considerations of variety and contrast are discussed.

Pottery.—Important in the course is the study of pottery. Designing, building, and decorating are the three parts of the problem which are undertaken by the pupils, but glazing and firing are considered, although not at present done in the school. The making of pottery gives opportunity for the study of pure form in three dimensions in a medium most responsive to the touch of the fingers. The importance of working in harmony with materials, of so using them as to bring out their greatest beauty, a fundamental principle of all design, can be most forcibly taught in the craft of pottery. Here the pupils must learn that in good craftsmanship the aim is not to conceal the plasticity of the clay or all traces of the fingers upon it but rather that a characteristic handling is an important artistic factor in the result desired. Other fundamental considerations of design which also are met fairly here are the importance of fitting a form to its use, the meaning of beauty of proportion and grace of outline, and the principle of introducing decoration only when and where it serves to accent form. Typical problems of the course are a cylindrical vase with incised decoration, a teapot, sugar bowl, and cream pitcher undecorated, a bowl with low relief decoration, and various vase and dish forms designed for special purposes.

Household design.—A problem such as designing and printing from a wood block a surface pattern for a curtain, or working out a stencil design for a sofa cushion may serve as a point of departure leading to the consideration of furnishing a room harmoniously. Informal discussions of household art with illustrations of well-furnished modern rooms are an important factor in the course. In this connection a rug design is sometimes worked out, each pupil choosing his own symbolic motif, and adapting it to the needs of a rug suitable for his own room. Though these designs can not be woven in school, an intelligent interest in rugs is aroused in the pupils so that examples of the finest oriental rugs exhibited in the city take on new meaning for them.

Color.—The study of color includes a review of color qualities, hue, value, and chroma, with the making of simple scales. The pupils then experiment in combining colors in related and complementary groups. Examples of color harmonies taken from various sources—pottery, Japanese prints, textiles, butterflies, birds, etc.—serve as suggestions.

Design to be used with type.—Some attention is given to designing for head and foot pieces, initials, etc., suitable for use with a type page; for example, the school paper. Lettering and its place in design are taken up in the problem of a design for a program cover to be reproduced and used by the school.

GAMMA.

The work of this class varies considerably from year to year, according to the special needs of the pupils. Both design and representation are included, the work of the two preceding years in these subjects being carried further.

Representation.—One or more of the following topics is taught: Still life in light and shade, pencil and charcoal. Still life in water color. Figure drawing from the cast and copying from studies by the masters. Landscape sketching in water color.

Design.—One or more of the following topics is taught: Pottery, more advanced problems. Penwork and the elements of illumination, including the making of ornamental initials in color. Stenciling.

ART APPRECIATION.

The course.—This course consists of a series of weekly talks illustrated by stereopticon slides and otherwise, and a certain amount of required reading (How to Study Pictures, by Charles H. Caffin).

Art as a language.—Art, especially painting, is considered as a language for the expression of ideas and emotions, and comparisons are drawn between the painter's art and that of the musician and of the writer. After defining the field of painting, the terms of the painter's language, line, dark and light, and color are discussed as to their possibilities of expressing visual ideas and of suggesting emotions. Such topics as drawing, values, light and shade, perspective, texture, technique, and composition are taken up.

Survey of historical schools.—After these preliminary considerations comes a general survey of the history of painting, showing broadly its development from the time of Cimabue to the present. Only the most important painters are studied, and these by a series of comparisons which bring out sharply not only the individual characteristics of their work, but also lead to an understanding of the ideals of the period and of the country in which they lived. For example, the painters of the Renaissance show clearly, both in their subjects and in the treatment of their pictures, the newly acquired interest in the classics, the growth of scientific knowledge, and the increasing value set upon individuality which was beginning to permeate the life of the period. Thus the course may throw a side light upon other studies, as history and literature.

Result expected.—But the chief result aimed for is a broadened view of the meaning of art, a serious desire to look at each picture as far as possible from the standpoint of the painter, and some power to respond to the appeal of form and color. With these as habits of mind, a pupil has laid the foundation of ever-growing ideas of beauty. He at least will realize that he should carefully consider a picture before deciding whether he likes or dislikes it, and through contact with the serious pictorial expressions of the great artists, his own personality can not fail to be enriched and his sympathies widened and deepened. For it is literally true that one who really sees a masterpiece of painting comes to know the man who painted it in no less degree than he may know a writer through his books.

Architectural talks.—The course ends with two or three talks on architectural composition as shown in examples of the great styles of architecture: Egyptian, Greek, Roman, Gothic, and Renaissance. Only the more obvious distinguishing characteristics of these styles can be considered in a few typical examples.

Museum trips.—One or more visits to the Metropolitan Museum are made with the class in order to point out some of the more important examples of original work by the painters that have been studied.

COLLEGE PREPARATORY COURSE.

This is a one-year's course which covers the ground prescribed by the college entrance requirements in which free-hand drawing may count as one unit. The year's work includes the making of at least 20 finished drawings on a uniform size of paper. The course comprises drawing geometrical figures, etc., from dictation; sketching from the object geometrical solids, common utensils, and furniture, details of machinery, etc.; sketching from copy, with enlargement or reduction, machine parts, and details of historical ornament.

The work is largely in pencil outline, although some light and shade may be included. Correctness of proportion, accuracy of parts, and right method of procedure in making a drawing are insisted upon.

SCHENECTADY, N. Y.¹

Course in Free-hand and Mechanical Drawing.

FREE-HAND DRAWING.

The course in free-hand drawing is outlined to meet the regents' requirements, design being taught during the first and third year and representation during the second and fourth. As only two periods a week are required during each year it is possible and desirable to combine the first and second and the third and fourth years and to fill the remaining period with work in art history. In this way the pupil has five periods of drawing a week and completes the course at the end of his second year, after which special classes are offered in advanced work in representation and design.

Pupils who are likely to need or desire drawing before leaving the high school are urged to enter the class their first year, since courses are arranged at that time and it will be less likely to interfere with other subjects than later.

With the opening of the new high school there is planned a special fine arts course for those pupils who have ability and are not intending to go to college or who plan to enter an art school at the end of their high-school course. It would be well for pupils entering high school in September, 1912, to bear this in mind.

It is hoped that the work in drawing will give the pupil another means of expression, help him to see, and assist in teaching him self-control, carefulness, and patience. He should also learn something of the masterpieces of architecture, sculpture, and painting, and of the men whose genius has influenced the world.

FIRST YEAR.

(Two periods a week.)

Design.

Leading principles.—Suitability, balance, rhythm, and harmony as developed in borders and surface repeats, book covers, tiles, etc. Arrangements of straight and curved lines (geometric and abstract forms). Use of squared paper in design. Application of units to inclosing forms. Rhythm of tone, use of three and four notes.

Constructive design.—Fitness to purpose in material and form of simple objects designed by class, with decoration and perspective sketches of same.

Lettering.—Single line letters are used and also the Roman text, with application to book covers, portfolios, etc.

¹ Caroline Budd, free-hand drawing. Frank Hulse, mechanical drawing.

SECOND YEAR.

(Two periods a week.)

*Representation.**Perspective principles.*—Theory and practice. Parallel and angular perspective.

Types forms and simple objects resembling them, drawn above and below the eye, alone or in simple groups, in accented outline, flat tones showing values and in simple light and shade. Drawings from furniture having straight lines, Memory drawings of objects made from description.

Nature forms.—Botanical and biological drawings made from specimens and from memory.*Landscape.*—Copy of landscape by Woodbury. Sketches from school windows. Landscape in flat tone used as illustration.*Pose.*—Sketching from pose. Use of squared paper to enlarge figure. Material used: Pencil, crayon, and charcoal.*History of art.*

(One period a week for those pupils having second-year drawing.)

Egypt.—The Pyramids and Sphynx. The Tombs of Beni-Hassan. Temples of Edfou, Karnac, and Luxor. Collossi of Memnon.*Greek art.*—Olympic games and influence on Greek sculpture. Architecture, Akropolis, Parthenon, Erechthéum Nike Apteros. Drawing of Greek columns and details of ornament.*Roman.*—Architecture, sculpture, and painting.*Saracenic.*—Architecture and decoration.*Byzantine and Romanesque.*—Architecture, sculpture, and painting.*Gothic.*—Architecture, sculpture, and painting.*Cathedral towns of England and France.*

THIRD YEAR.

(Two periods a week.)

*Design.**Decorative design.*—Adaptation of plant forms to purposes of design, as bilateral of balanced unites, in borders and surface repeats, showing a variety of geometric plans, relating by use of lines. Plant form adapted to inclosing forms. Space breaking, subordination to line, to center, to size. Composition: Plant, landscape, and figure. Rhythm of tone and color harmony. Study of Japanese prints and oriental rugs.*Constructive design.*—Objects having suitable handles. Simple pieces of furniture. Interiors. Simple plan for a house or bungalow.*Lettering.*—Use of Roman text, also original lettering to suit purposes of design. Study of medieval manuscripts.

Materials used in work: Pencil, charcoal, water color, ink.

Upon completion of the third-year work in design, the pupil will be admitted to a class in applied design (two periods a week), where he will learn through experiment the different requirements of various mediums, since all work done must be from his own design, and may be as follows:

Fabrics.—Stenciling, block printing, and needlework for curtains, sofa cushions, table covers, apparel, etc.*Leather.*—Stenciled, cut, tooled, as in cardcase, book cover, bag, blotter corners, portfolio, etc.

Metal.—Hammered, etched, pierced, as in tray, candle shade, lantern, watch fob, pendant, buckle, hatpin, etc.

Wood.—Stained or carved for boxes, clock frames, bookracks, etc.

FOURTH PERIOD.

(Two periods a week.)

Representation.

Perspective principles.—Parallel, angular, and oblique perspective. Object drawing full values. Furniture and interiors. Memory drawing from dictation.

Plant study.—Decorative composition. Drawing in full values.

Landscape.—Tone drawing from masterpieces. Out of door study. Study of principles of line and color composition in Japanese prints.

Pose.—Figure composition from draped model.

Architectural detail.

Historic ornament.—Materials used: Pencil, charcoal, crayon, water color, and ink.

Upon completion of this course advanced work in representation is offered, and includes drawing from still life and the cast, landscape and figure composition and illustration in tone and color. Design and representation are united in the drawing of posters, bookplates, etc., and sketches are made from nature and the draped model.

HISTORY OF PAINTING.

FIRST TERM.

(One period a week for the pupils having fourth-year drawing.)

1. Egyptian wall decorations, mummy wrappings, and parchments.
2. Greek vase painting: Prehistoric, archaic, black figured and red figured ware.
3. Italian: Giotto, Botticelli, Raphael, Michaelangelo, and Leonardo da Vinci.
4. French: David, Delacroix, the Barbizon group, Millet, and Corot.
5. Dutch: Van Eyck, Memling, Rubens, and Rembrandt.
6. Spanish: Velasquez and Murillo.
7. English: Sir Joshua Reynolds, Gainsborough, pre-Raphaelite school, Turner, and Ruskin.
8. Modern portrait painters: Sargent, Whistler, Cecilia Beaux, Alexander, Watts, Reynolds, Gainsborough, Carolus Duran. Compare with early portrait painters: Rembrandt, Van Dyke, Holbein, Velasquez, Raphael.
9. Landscape painting to-day: Enneking, Woodbury, Davis, Kaula, Lucy Conant, Monet, Whistler, and others. Early landscape painting: Claude Lorraine, Ruysdael, Rembrandt, Titian, Turner.
10. Mural painting: Boston library, Congressional Library, Appellate Court, New York. Early mural decorations, Van Eyck, Giotto, Michaelangelo.

MECHANICAL DRAWING.

The mechanical drawing courses are five in number and cover the rudiments of mechanical and architectural drawing. These courses are designed to cover the principal conventions and the most important mechanical principles and architectural details. As far as possible, commercial drawing-room practice will take the place of ornate rendering. The student, in order to satisfactorily complete his course, must give evidence of the understanding of what he does, as well as correct technique in rendering his work. Also he must both give the required time and complete the work assigned for any course in order to receive credit for such course.

The courses are as follows, and may be begun at the opening of the school year, either in September or in February:

Course I. First year, three periods per week, 114 hours during the year. Designed to include the following:

- (a) A system of good lettering.
- (b) The care and use of instruments.
- (c) Simple geometric constructions.
- (d) The ordinary conventions of mechanical drawing.
- (e) The working drawing, with knowledge of its purpose and use.
- (f) The development of the surfaces of the simple type forms and discussions as to their application.
- (g) Simple problems in interesting type forms.

Course II. Second year, three periods per week, 114 hours during the year. This course will continue the work of Course I, as follows:

- (a) The theory of projection, with special emphasis upon orthographic projection and the angles of projection.
- (b) Problems involving the projection of lines and of type forms.
- (c) The application of the above problems to the intersection of solids and the development of the surfaces of such intersecting solids, with discussions of application to heating and ventilating, and sheet metal work.
- (d) The development of oblique forms, both cylindrical and conical.
- (e) Screw heads, tapped holes, and bolts, with correct proportions and applications.
- (f) The drawing of machine parts from models.

Course III. Third year, two periods per week, 76 hours during the year, continues the work of Course II and includes:

- (a) Such geometric constructions as refer to the construction of mechanical devices for transmitting or changing motion.
- (b) The construction of spur gearing using the involute system.
- (c) The construction of simple cams and the study of their uses.
- (d) The slide valve diagram.
- (e) Special study of mechanical movements and the use of handbooks.

Course IV. Fourth year, two periods per week, 76 hours during the year, includes the extension of Course III to more complicated problems and includes:

- (a) Problems dependent upon the prismatoid formula.
- (b) The use of the force polygon in mechanics.
- (c) Problems of mechanics.
- (d) Designs of truss, retaining wall, foundations or dam.

Course V. Fourth year, two periods per week, 76 hours during the year, is designed specially for students who have already taken Courses I, II, and III, and who wish some architectural work. It includes:

- (a) Study of the Roman, Tuscan, Doric, Ionic, and Corinthian orders.
- (b) Forms of moldings, arches, doors, windows, etc.
- (c) Details of construction—windows, doors, stairs, framing, and cornice.
- (d) Interpretation and analysis of æsthetic principles in architecture and readings and study of sketches by famous artists.
- (e) Study of the arrangement, form, and proportions of rooms as to utility, convenience, location, lighting, etc. Also the study of openings and porches, of general proportions, and the study of materials.
- (f) The plan, front elevation, side elevation, and sectional elevation of a building.
- (g) Such special reading and study as is necessary to a thorough understanding of the subjects treated.

NEWARK, N. J.¹

For the most part the work in Newark is still elective, but each year the classes increase in number and in size. Ten years ago there was but one high school in Newark, with two instructors in the art department. There are now three buildings and a fourth anticipated. The growth of the art department has been proportionate and demands to-day eight instructors, with a ninth needed. The high-school work in

¹ Eva E. Struble, supervisor.

art is now organized under two heads, commercial and domestic, as tabulated:
Commercial:

Composition.	{	Advertising—poster, street-car, magazine.
Design.		Window display.
Perspective.		Wood—furniture, light craft.
Color.		Brass, silver—jewelry, light craft.
		Leather—desk implements, covers, mats, etc.

Domestic:

Composition.	{	Home—interior decoration, house planning.
Design.		Costume—gowns, scarfs, etc.
Perspective.		Design—textiles, leather, etc.
Color.		

PORT DEPOSIT, MD.¹

The work is compulsory in the first and second forms and elective thereafter. Each student has 40 minutes twice a week, but advanced students often devote much more time to this branch.

The first form takes up the perspective of the circle in September, studying theory and practice from flat disks and progressing to still life studies, where the circle in various positions and relations is part of a problem, including perspective, values, and composition. An occasional lesson in plant form varies the work. December is devoted to Christmas work, where the student wishes to do so. In January they take up the study of the figure from the pose, working very simply for action, proportion, and character of line. In the spring we devote ourselves to trees and simple landscape dealing with perspective, linear and aerial, reduced to their simplest forms.

The second form begins the school year with the perspective of the rectangle, blocks, books, shut and open, boxes, an open door and the appearance and construction of a house. They also take up life work in January, carrying it on to more difficult phases, but keeping the handling more strong and simple. When the spring comes, early in Maryland, they work out of doors on pleasant days, drawing directly from buildings and studying the bare trees. The permission to work out of doors is conditional on the steadiness of application and satisfactoriness of the results. Considerable attention is given to lettering in both forms. The work in design is done in connection with the department of manual training.

In the third form work becomes elective, and every effort is made to find out the lines on which each student can develop most effectually. Some very good work has been done in life, landscape, and in color, and drawings of interiors are to be developed another year.

We bear in mind in the plan of work such training as will be needed or useful in the career of an engineer, the detail work required by doctors and scientists in illustrating theories and written matter, the needs of a student who may want to enter an art school, and the training useful to one who shows a taste for newspaper or commercial work. The study of composition in one form or another is never lost sight of, and the effort is made to so arrange the problems offered that each student will be taxed to the extent of his ability, but no one subjected to the discouragement of a demand beyond his best powers.

ST. LOUIS, MO.²

HIGH SCHOOL COURSE OF STUDY—DRAWING.

GENERAL NOTES.

The outline is not arranged according to the order in which each topic is to be presented, but according to the amount of time to be given.

¹ E. W. Coleman, instructor.

² (Mrs.) M. E. Riley, supervisor.

Work from plants and out-of-door study must be arranged according to weather, material that can be obtained, etc., and should be done whenever all conditions are favorable.

Throughout the course, growth and development—not finished work—should be the aim.

The time allotted for each topic should be given to it.

The time allotted includes all preliminary work—that is, all practice work done by the pupils and the development of the lesson by the teacher.

The amount of work done in the allotted time by the average pupil should be the measure of the amount of work to be accomplished.

Pupils should be marked not only upon the quality of work, but also upon the quantity done.

SUBJECTS TO BE TAUGHT.

[General course for all the high schools.]

Object work.—All still-life studies.

Plant studies.

Life work.—Human figure.

Landscape.—Out of doors, including buildings, roof studies, street scenes, landscapes, etc.

Design.—Both decorative and constructive, including the actual making of things.

Collections.—The collection of art pottery, draperies, books, casts showing ornaments, art journals, alphabets (one set for each teacher), initial letters, examples of designs, Japanese books, prints, reproductions, reproductions of pencil and ink sketches and all material belonging to the school should be used constantly in lessons and should be where the pupils can have access to them and make use of them.

Design.—Throughout the four years' course the aim should be to give the pupils an understanding of the underlying principles of good design, and the ability to enjoy and appreciate good design when they see it.

METHODS OF WORK.

Pencil and charcoal.—More time should be given to the pencil work than to charcoal.

Landscape.—In addition to the work in landscape using water color alone, very interesting effects can be obtained by making studies using charcoal and flat tones of color over it.

Water color.—All water color, except design, is to be done on wet paper. No opaque color should be used in representation (still life, plant studies, landscape, etc.) on white paper.

Working upon the same study or exercises along any of the lines of work planned should be continued only long enough for each pupil to have made a sufficient effort to carry out the idea of the exercise.

Talented pupils and those that work very rapidly should fill the time by doing more of the same sort of work. In sketching, studies may be done from different points of view.

Each pupil should write his name, class, and date on all papers and pieces of work when completed.

MATERIAL.

Helps in lessons and designs.—Japanese books, textiles, illustration of surface, borders, units (rosettes, bilaterals, radiating designs, single complete units, elements and combinations) and spotting should be collected and used in lessons in design.

Plant studies.—Plant studies should be kept fresh and be arranged artistically. Glasses of wet sand will keep the plants fresh long enough to work from.

The arranging of the plants should be part of the pupils' training as well as making sketches and studies from them.

Shadow boxes.—All studies requiring backgrounds, and involving the study of light and shade, should be arranged in shadow boxes.

Models—Human figure.—In the latter lessons a great deal of interest will be added by interesting costuming in the study of the human figure.

Still life.—Special attention should be given, in the composition of groups of still life, to color combinations, both in regard to the objects themselves, and also to the backgrounds against which they are arranged.

The form, size, texture and arrangement must be considered in relation to one another.

Studies must be placed both above the eyes and below the eyes, much greater proportion of time being given to the studies placed below the eyes.

First half of the first year.

[Allowing five weeks for incidental interruptions.]

	Weeks
1. Design—Leading principles.....	4
2. Plant study—Pencil.....	3
3. Object study—Pencil.....	4
4. Out-of-door study.....	1
5. Life—Human figure.....	2
6. Domestic art.....	1

Second half of the first year.

[Allowing five weeks for incidental interruptions.]

1. Design—Block print.....	4
2. Plant study—Charcoal (full values).....	3
3. Object study—Charcoal (full values).....	4
4. Out-of-door study.....	1
5. Life—Human figure.....	2
6. Domestic art.....	1

First half of the second year.

[Allowing five weeks for incidental interruptions.]

1. Clay modeling.....	4
2. Plant study—Water color.....	3
3. Object study—Charcoal (full values).....	4
4. Out-of-door study.....	1
5. Life—Human figure.....	2
6. Domestic art.....	1

Second half of the second year.

[Allowing five weeks for incidental interruptions.]

1. Clay modeling.....	5
2. Plant study—Water color (full values).....	3
3. Object study—Water color (full values).....	3
4. Out-of-door study.....	1
5. Life—Human figure.....	2
6. Domestic art.....	1

First half of the third year.

[Allowing five weeks for incidental interruptions.]

Art history—One single period a week.....	15
All other subjects counted in weeks of four periods each.	
1. Design—Leather.....	6
2. Plant study—Water color (full values).....	3
3. Object study—Water color (full values).....	4
4. Out-of-door study.....	1
5. Life—Human figure.....	2

Second half of the third year.

[Allowing five weeks for incidental interruptions.]

Art history—One single period a week.....	15
All other subjects counted in weeks of four periods each.	
1. Design—Leather book.....	6
2. Plant study—Water color (full values).....	2
3. Object study—Water color (full values).....	4
4. Out-of-door study.....	1
5. Life—Human figure.....	2

First half of the fourth year.

[Allowing five weeks for incidental interruptions.]

	Weeks.
Art history—One single period a week.....	15
All other subjects counted in weeks of four periods each.	
1. Metal work—Bowl.....	5
2. Plant study—Water color (full values).....	3
3. Object study—Water color (full values).....	3
4. Out-of-door study—Charcoal with water color.....	2
5. Life—Human figure.....	2

Second half of the fourth year.

[Allowing six weeks for incidental interruptions.]

Art history—One single period a week.....	14
All other subjects counted in weeks of four periods each.	
1. Metal work.....	5
2. Design—Stencil.....	4
3. Plant study—Water color (full values).....	3
4. Life—Human figure.....	2

ART HISTORY.

THIRD YEAR.

I. Ancient and Middle Ages.

1. Assyrian and Egyptian architecture, sculpture and painting.....	4
2. Greek architecture, sculpture and painting.....	10
3. Roman architecture, sculpture and painting.....	6

Pagan and early Christian art.

4. Saracenic architecture and decoration.....	1
5. Byzantine and Romanesque architecture, sculpture and painting.....	3
6. Gothic architecture, sculpture and painting.....	6

FOURTH YEAR.

II. Renaissance and Modern Art.

1. Art of the thirteenth and fourteenth centuries.....	2
Sculpture precursors of renaissance.	
Beginnings of paintings.	
2. Art of the fifteenth century.....	3
3. Art of the sixteenth and seventeenth centuries.....	7
4. Renaissance in Germany.....	2
5. Renaissance in Spain.....	2
6. Art in the Netherlands, including engraving.....	3
7. Modern art, French, German, Swedish, Dutch, American.....	10

LOS ANGELES, CAL.¹

ART.

Purpose.—The purpose of a course in art is to attain the artistic habit of mind; to cultivate appreciation and enjoyment of the beautiful by observation, by reproducing what is seen, by cultivating the imagination through evolving new creations, by helping students to acquire a sense of power through skill in technique and a knowledge of the principles of harmony of color; to utilize in the practical affairs of life their technical attainments; to give labor esthetic expression; and to assist in raising the standard of civic art in the community.

Scope.—The scope of the work in art in the intermediate and high schools includes practice in handling the different media for artistic expression; pictorial representation of objects within and without the classroom; studies from life; designing; illustration; domestic decoration; clay modeling; applied art work in wood, metal, and other materials; art history and art appreciation, either by lectures or by the study of text.

Methods.—In teaching pupils to see with understanding, to do without loss of individuality, to repeat again and again without discouragement in order to acquire skill,

¹ May Gearhart, supervisor.

it is necessary that the teacher be master of many methods. Variety of methods as well as of work is necessary to bring out the different powers of the individual. To become an adept in developing a love for proportion, rhythm, and harmony in different pupils a teacher must approach them at different angles and with different methods, with the idea of thought in the conception, delight in the work, and adaptation to use and environment.

B7.

Object drawing—Simple groups in outline, color schemes in flat tones; perspective outline studies from books, boxes, etc.

Plant study—Flower, seed pods, etc.; composition; decorative treatment.

Landscape composition.

A7.

Color—Color charts, color schemes, making of color book.

Design—Work from plant study of previous term; block printing, stencils; apply to simple articles of use.

Picture study.

B8.

Object drawing—Continuation of seventh grade.

Plant study—Continuation of seventh grade.

Picture study—Landscape compositions applied to book covers, etc.

A8.

Color—Color schemes, complementary and analagous; study of color prints; application of color schemes.

Design—Study of space relations, applied to articles; abstract problems developed from plant study; stencils.

B9.

Object drawing—Proportion; composition; perspective.

Plant study.

Lettering.

Optional—Design in connection with special work; applied art.

A9.

Plant study.

Design—Space relation; space filling.

Lettering.

Applied art.

Optional—Design in connection with special work.

B10.

Freehand sketching—Perspective, interiors and exteriors, or design for special work.

Object drawing.

Composition.

Lettering.

A10.

Historic ornament.

Design—Invention and adaptation.

Applied art.

B11.

Cast and pose drawing.

Figure composition, decoration.

History of art.

A11.

Historic ornament.

Design—Constructive and decorative.

Applied art.

B12.

Continue B11.

A12.

History of art.

Applied design.

Applied art.

DOMESTIC ART OUTLINE.

B9.

Design—Spacing, tucks, ruffles; for outline, darning, couching, etc., applied to simple bag or border.

Color—Complementary and analagous schemes; freehand sketches; proportion; composition.

A9.

Design—For needlework, scallops, French embroidery, applied to towels, waists, doilies, etc.

Color.

Freehand sketches.

B10.

Design—For needlework; long and short, solid; pillow top; costume design.

Color—Interiors; home plans.

A10.

Design—Lettering and monograms, applied to household linens.

Costume design.

Color schemes.

Home plans.

MECHANICAL DRAWING.

In Intermediate Schools.

(NOTE.—“M” indicates mechanical drawing.)

M1. Eighth grade: Line work, dimensions, arrangement of views, drawing to scale, and some inking.

Freehand sketching from objects accompanied by working drawings of same.

Lettering.

M2. Continuation of M1.

M3. Continuation of eighth-grade work, introducing to engineering, architecture, and the trades.

M4. Continuation of M3.

Purpose.—It is the general purpose to prepare all students who take this work either for going into employment at the completion of their school work, or to enter any of the city high schools and continue their drawing in any of the various special courses offered.

In High Schools.

Mechanical-drawing courses are arranged with reference to the course of study being pursued.

College preparatory drawing consists of one term of plane geometrical and constructional drawing; one term of solid geometrical drawing, intersections and developments, as required by the State university.

Mechanic-arts drawing prepares for engineering courses in the universities, continuing the six-year courses in the city high schools, or practical use in industrial pursuits.

Normal manual training drawing offers training in geometrical drawing, the developments and intersections; also furniture, pattern making, and machine drawing.

Pattern making, cabinetmaking, foundry, forge, and machine shop drawing consists of special training in preparing working drawings, useful and rational designs consistent with good shop practice.

Machine drafting offers a special training in mechanical drawing involving shop practice, machine design, detailing, and drawing-room methods, in which the student is given sufficient practice to prepare dependable drawings with neatness and dispatch.

Engineering, mechanical, and electrical drawing gives practice in the preparing of designs, details, working drawings, estimates, graphics, mathematical, mechanical, and electrical determinations.

The above courses of drawing all give practice in sketching, dimensioning, lettering, tracing, and blue printing. They are intended to be both practical and educational. In all except the college preparatory drawing the student is immediately called upon to prepare himself to produce rational working drawings, established methods are explained, and original thought encouraged and developed. It is hoped that anyone compelled to drop out at any time will have derived some tangible benefit from this work.

The following drawing may occur in different grades, depending upon the course of study followed by the pupil:

	No. Periods of per weeks. week	
M3. Introductory to engineering and the trades. Line work, arrangement of views, dimensioning, drawing to scale, inking, freehand sketching of objects accompanied by working drawings of same, lettering.....	20	5
M3c. Machine drafting. Same as M3, except amount of time.....	20	15
M4. Continuation of M3.....	20	5
M4c. Continuation of M3c.....	20	15
M5. Mechanical engineering, mechanic arts, pattern making, forge, foundry, machine shop. The preparing of general drawings and detailing same from the prints of machine parts, perspective drawings, sketches, data, etc.....	20	5
M5a. Electrical engineering. Same as M5, except the substitution of electrical for machine parts....	20	5
M5b. Normal manual training, cabinetmaking. Same as M5, except the substituting of furniture and woodwork for the machine parts.....	20	5
M5c. Machine drafting. Same as M5, except amount of time.....	20	10
M6. Mechanical engineering, mechanic arts, pattern making, forge, foundry, machine shop—the preparing of general drawings and detailing same from machines and machine parts.....	20	5
M6a. Electrical engineering. The preparing of general drawings and detailing same for electrical machinery and apparatus.....	20	5
M6b. Normal manual training. Cabinetmaking. Same as M6, except that most of the work is in woodwork.....	20	5
M6c. Machine drafting. Same as M6, except amount of time.....	20	10
M7. Mechanical engineering, mechanic arts. The preparing of working drawings involving the consideration of transmissions, gearing, and mechanical movements.....	20	5
M7a. Electrical engineering. The preparing of working drawings, involving the consideration of transmissions, gearing, and electrical devices.....	20	5
M7c. Machine drafting. Same as M7, except amount of time.....	20	10
M8. Mechanical engineering. Mechanic arts. Designing and drawing of simple machines from formulas, data, and accepted practice, graphics, statics.....	20	5
M8a. Electrical engineering. Same as M8, as applied to electrical machinery.....	20	5
M8c. Machine drafting.....	20	10
M9. Mechanical engineering. Machine drafting. Machine design, strength and selection of materials.....	20	5
M9a. Electrical engineering. Electrical machinery designs, strength and selection of materials....	20	5
M10. Mechanical engineering. Machine drafting. M9 continued, involving the graphics of work, operation, efficiency, etc.....	20	5

	No. of weeks.	Periods per week.
M10a. Electrical engineering. M9a continued, involving the graphics of work, operation, efficiency, etc.....	20	5
M11. Mechanical engineering, electrical engineering, machine drafting. Engineering sketching, estimating, calculating, designing, and illustrating by perspective sketches, sectioning, dimensioning, etc.....	20	5
M12. University preparatory. Plane geometrical drawing, as required by State university.....	20	5
M13. University preparatory. Solid geometrical drawing, as required by State university.....	20	5
M14. Machine drawing. Special for those having completed M12 and M13.....	20	5
M15. Machine drawing. M14 continued.....	20	5

SURVEYING DRAWING.

In the High Schools.

(NOTE.—“S” indicates Surveying Drawing.)

	No. of weeks.	Periods per week.
S1. Freehand lettering. Principles of the Roman, block, and ornate alphabets.....	20	5
S2. Freehand lettering. Continuation of S1 work, with addition of English and German texts and the general arrangement of titles.....	20	5
S3. Map drawing. Includes the usual conventions for plane surveying with practice in the drawing of maps from models furnished by the surveying class.....	20	10
S4. Map drawing. A continuation of S3 course with emphasis upon the complete map, including the arrangement of title, length, and bearing of each boundary line, etc.....	20	10
S5. Surveying drawings. For those who have had drawing M12, M13, and trigonometry, consisting of field work, use of tape, instruments, plane table, plotting from work, tracing, and blue printing.....	20	5
S6. Continuation of S5.....	20	5

ARCHITECTURAL DRAWING.

In the High Schools.

(NOTE.—“Ar” indicates Architecture.)

A four-year course as outlined is intended to give a preliminary training, fitting for office or college. Courses 19, 20, 21, and 22 are sufficient for college entrance requirements.

	No. of weeks.	Periods per week.
Ar1a. Line work, dimensioning, arrangement of views, drawing to scale, freehand sketching of objects, accompanied by working drawings of same.....	20	5
Ar1b. Freehand drawing (composition proportion), elements of perspective, pencil work.....	20	5
Ar2a. Continued from Ar1, with special application to work in architecture.....	20	5
Ar2b. Continued from Ar1, pencil and colors.....	20	5
Ar3. Bungalow design, arrangement of rooms, etc., study of interior and exterior composition, styles.....	20	10
Ar4. Ar3 continued, scale and full-size details.....	20	10
Ar5. 2-story houses, study of staircases, etc.; treatment of materials, simple rendering in pencil, ink, or color.....	20	10
Ar6. Ar5 continued, methods of estimating, outlines in specification writing.....	20	10
Ar7. Problem; as a residence, group of small houses; all to a given program of requirements. Study of Greek orders.....	20	10
Ar8. Problem; schoolhouse, small church, office building; all to a given program of requirements. Study of Roman orders.....	20	10
Ar9. Study of classic orders. Lettering; rendering of plates of classic architectural details.....	20	5
Ar10. Study of the orders continued; rendering in various media, ink, sepia, and color.....	20	5
Ar11. Elements of architectural drafting; working drawing of simple detail. Plans and elevations for simple bungalow.....	20	5
Ar12. Continuation of preceding Ar21; plates of details; perspective drawing rendered in color.....	20	5

GRAPHICS.

(NOTE.—“G” indicates Graphics.)

	No. of weeks.	Periods per week.
G1. Engineering lettering, composition of forces, movements, investigation of simple frames, investigation of loads, normal and eccentric.....	20	10
G2. Complex frames, reversals of stresses, design and detailing.....	20	10

STRENGTH OF MATERIALS.

(NOTE.—“Ss” indicates Strength of Materials.)

Ss1. Theory of moments, reactions, forces, in materials, introducing work in cement.....	20	6
Ss2. Continuation of theory Ss1; theory of design; laboratory demonstrations in wood, steel, stone, cement, etc.....	20	6

A number of States adopt textbooks in drawing, in which case the outlines are generally planned so that the complete course is based upon these publications. The same is true of a number of cities also. This greatly simplifies the work of the supervisor, but is an additional expense to the community. However, in towns without special teachers this seems to be a very helpful means of presenting the work and often justifies the extra expense.

Most supervisors and teachers make constant use of textbooks and other publications as illustrative material, which, in many instances, are cut up and carefully mounted for classroom study.

D. APPLICATION AND CORRELATION.

“Education is a preparation for life.” Only within more recent times has this saying been interpreted to mean the life of the child, as well as the life after schooldays. Just when drawing began to be applied it is difficult to state, but certainly its application has been a gradual and constant growth.

From the earliest entrance into the school curriculum, map drawing has been closely correlated with the study of geography. With the advent of manual training and the beginning of the arts and crafts movement, the shop problem was severely criticized from the standpoint of good design. The gradual breaking of the barriers of professional jealousy and pride finally resulted in the correlation of drawing with shopwork. Design resolved itself into two kinds, applied and constructive, the one meaning surface enrichment, the other design which entered into the actual construction of the three-dimensional problem.

Thus an early and excellent beginning was made, and, as many and varied materials found their way into the schoolroom in the form of elementary handwork, it was found that to divorce drawing and construction was impossible. They are quite inseparable, the one finding its natural outlet in the other.

The actual problems were at first more or less abstract and unrelated to any particular use or immediate need. Before long, however, the other school work began to receive attention from the supervisor and, in seeking new problems, correlation with regular school subjects came into being. In addition the child's outdoor activities, his home environment, and his social life began to be studied; and the principles of drawing and design, soon followed by the actual constructive work, were directly applied to the child's immediate life.

The field for correlation seems almost unlimited. Even a casual survey of the outlines included in this bulletin will show how closely both drawing and construction are related to the school subjects and to each other. Illustrative drawing is applied to the reading and story-telling, to history and to geography. Object and nature drawing are closely associated with nature study, geography, and history.

The school booklet has come to be a common problem, of inestimable value, in relating drawing, design, and construction to any and all studies in the curriculum. Booklets of spelling, writing, arithmetic, history, etc., are eminently successful ways of enforcing school teaching, and form dignified and permanent records of lasting value.

Mr. Henry T. Bailey writes:

The making of a good booklet involves the vital correlation of several school topics and processes, presents many opportunities for sound instruction, gives a wide scope for individuality, and furnishes genuine training of hand and eye. From such work the pupils derive more pleasure and more solid satisfaction than from any other school project yet discovered.¹

One energetic teacher of the South² suggests most interesting methods of adapting the booklet problem. She writes as follows:

If drawing is to take its place in our elementary schools (respond to some need in the pupils everyday life) and is not to be an isolated subject, then the special-day program and the club work that is now a part of our southern schools must come in for a large share of attention.

In this special program and club work drawing has been so correlated as to be of the utmost value. The drawing correlated with a study of our State has been the means of teaching more of its history than ever before. Space will not permit me to give an outline in detail or to show how correlation with English, history, spelling, or geography was done to great advantage to the pupils, in that more interest was shown in the lessons, clearer understanding of the subjects prevailed, and less time was taken to learn the assignments."

These schemes of correlation and problems for booklet making follow:

Mississippi Day.—Design cover for booklet, using State flower as unit of design. Illustrate pages on following subjects: Discovery; early history; soil; agriculture; manufactures; cities; educational institutions; history of State flags; famous men; legend of State flower.

¹ "Booklet Making," by H. T. Bailey. The Prang Co.

² Bessie R. Murphy, supervisor of drawing, Meridian, Miss.

Arbor Day.—Booklet "In Our Forest," same to contain careful drawings and descriptions of trees found in our State, also legends of same. Illustrate papers on "Uses of trees," "Best means of preserving our forest" (7th grades). Arbor Day invitations and programs.

Tomato Clubs (girls).—Each member designs book-cover, using club emblem as unit of design. Illustrate pages for book on "Club yell," Preparation of soil, Culture, etc. Make and design cover for tomato cookbook.

Corn Club (boys).—Illustrate papers on methods of planting, testing of seeds, preparation of ground, enemies of the plant, harvesting the crop, marketing the crop products of corn.

Cotton Clubs (boys).—Make booklet shape of cotton bale. Make careful drawings and give descriptions of seed, boll, blossom, boll weevil, picking baskets, bale, shipping, cotton products.

Other booklets are Health Day, Library Day, Field Day, Consolidation of Schools (including drawings of school buildings, etc.), Our Wild Flowers.

School pageants and festivals are a fascinating outlet for the drawing work. Historic art and costume and historic environment are really studied and actually practiced with not only a wealth of valuable knowledge gained, but intense enjoyment received. The "bug-bear" of discipline is swept aside, and very truly has some one said that teaching drawing is a joyous occupation. A school outline refers to this work as a part of the art teaching.¹

Wherever possible the art work is made to express school, home, individual, and social interests. The course as indicated is a separate statement of the grades; it is not rigid and is modified whenever special reasons for doing so arise. For example, the artistic needs of the festivals often furnish excellent problems for team work. The making of symbolic decorations for the gymnasium, where the school gathers, decorating costumes by stencil design or otherwise, the painting of scenes for the plays, designing stage properties, making banners and devices for Christmas processions, and the working out of program designs are typical phases of festival art work which introduce an excellent stimulus for cooperative effort.

Childhood games and sports receive their due attention. Kites, boats, sleds, skees, and a host of other things are made, after being first designed in the drawing room. The latest and one of the very finest forms of manual training—printing—offers unusual opportunities for the applied art work.

Illustrations for the elementary year book and decorative designs for other school printing, posters, and various other pieces of lettering for school use offer opportunities for the application of the art to everyday needs.¹

The home is also studied and furniture designed and made, color schemes are rendered, and home decoration is seriously considered. A direct application is supplied for rug and wall-paper design and designs for all home furnishings. In the lower grades actual miniature (doll) houses are furnished complete, with color schemes and all necessary furniture.

Even different countries and civilizations are studied through the drawing and handwork. The actual lives of the Indians, the Esqui-

¹ "A course of study in art," Ethical Culture School, New York City. Outlined by James Hall.

mos, the eastern nations, and the western nations are worked out in clay on the sand table or through drawing and painting.

Through such interesting work drawing is no longer a "special subject," but is a natural and necessary means of development in modern education. Its value must lie unquestioned when without it the modern vital and concrete problems can not be adequately studied. But the correlation must be natural, never forced. The true conception of the real meaning of drawing—the arts—for education at least, will readily show its place in relation to the child and to school work.

Says Miss Emma Church:

As to the work and industry of our school community we will but need to turn to the history of the race for the natural order of development of the forms expression, and we find the arts to have the first place, and those always first that call for motor expression, such as games, dances, ceremonials, song, pottery, weaving, and construction of various things of use, to which has always been added some design of religious or other signification. In the creation of these various things much thought is needed; and the ingenious teacher, instead of teaching reading, writing, arithmetic, and history as unrelated subjects, can create a necessity for their use, and to her joy will it be found that there is no difficulty in teaching children anything they want to know when they have use for their knowledge. We might eliminate grammar and spelling, and use words and language well, and step by step refine their use. All correlations should take place in children's consciousness, instead of our trying to correlate subjects.

Costume design and personal adornment are further opportunities for correlation. Dresses, hats, belts, collars, bags, jewelry, etc., are designed, constructed, and put into everyday use. Commercial courses include a study of commercial art; industrial courses involve study in industrial design; and classical courses demand the study of the arts of civilization.

For the benefit of the grade teachers, New York State has issued correlative charts,¹ based on the elementary syllabus. Each of the three charts, in which certain grades are grouped, gives page references to all subjects and quotes passages wherein the drawing and construction, or handwork, may be utilized and closely correlated with each. One university² has gone a step farther than this and has interwoven all subjects, including drawing, so that each is definitely related and quite dependent upon the other.

The supervisor of to-day never formulates his outline without considering all these forms of correlation, and abstract teaching is seldom if ever heard. Always the lesson of one day is applied on another, and the final result is a work of immediate and often lasting value. The fine mental training, certainly, is never lost, and the growth of art appreciation is constantly quickened and strengthened.

The broader conception of the idea of correlation seeks further to stimulate local pride in the designing and planning of decoration for

¹ Worked out by State normal-school teachers.

² Teachers' College, Columbia University, N. Y.

the school and other public buildings, the laying out of the school grounds, and general civic improvement; this last including the abolishment of sign boards, the cleaning of city and town streets, the study of lamp-posts, hydrants, watering troughs, monuments, and all other objects of public use. Such work, however, is in its infancy and requires for successful operation both keen intelligence and excellent training, supplemented by constant study. But the seed has already been sown, and a number of cities are gradually developing this practical application of principles too long applied to abstract and far-off problems.

E. PICTURE STUDY AND SCHOOL DECORATION.

Nearly every supervisor gives opportunity for picture study in the drawing course. While picture painting is not the aim of the teaching in drawing, any more than novel writing or the composing of poetry is the aim of the teaching in English, art appreciation is a main issue; and a study of fine pictures, showing the application of principles used in the classroom, is of great value in obtaining it. The mere ability to recognize great works of art is a source of constant enjoyment and a means of stimulating confidence, factors not to be lightly ignored.

The art sense is a product of education. It can be developed in accordance with either good or bad principles, high ideals or low ideals. Refined æsthetic taste comes from culture, and that is the basis of all true appreciation of art; to secure this culture we must have a knowledge of the lives and works of the artists themselves. The ideals of these artists will have much influence upon the world's ideals; the greater the artist the greater the influence; and therefore the more interesting and suggestive are the lessons to be derived from a knowledge of his life and achievements.

Emerson said: "It is better to educate a hundred people to appreciate art than to educate one artist."

I believe the psychology of art instruction for children to be the same as that of all subjects contained in the curriculum. We must use all these as a means for unfolding and developing the human spirit, which is really education in the highest sense, as what we are after is culture, and the power and perfection that come through culture.

Therefore surround the child with all that makes for culture. So give the children the best in art, literature, music, and in all subjects.¹

Little more than recognition is sought in the early grades; but, as the pupil progresses, the elements of perspective and composition are considered. In the upper grades and high school the tendency is to include sculpture, architecture, and the minor arts and crafts. Here the study may be continued outside the school walls, and such subjects as public monuments, sign and lamp posts, gates, fences, walls, etc., may be profitably discussed.

¹ Ida Hood Clark, in "Symposium on Picture Study." School Arts Book, Vol. VII, No. 6.

Picture study is taught by means of small "penny" pictures for individual pupils and large wall pictures for the class as a whole. Both methods have certain advantages. Small pictures are much more easily handled, and they may be mounted and preserved with written work in the form of a school booklet. Furthermore, the expense of obtaining wall sizes of the total number of pictures usually studied would eliminate such a procedure in the average school.

Reference to the outlines reprinted in this bulletin will give typical pictures used in each grade.

The character of the subject depends upon many things.

While the child's preferences are not the only factors to be considered, they can not be ignored if, as Jerome Eddy and so many others claim, *delight* is the purpose of art. The wise teacher will select from the most beautiful things in every realm those which awaken a response in the child, and will arrange these in such an order that as the child passes from grade to grade he may pass from one stage of appreciation to another until, perchance, he comes to delight in the adult "best."

A rough working classification seems to be this:

Primary grades: Appreciation of the story in pictures about pets, little children, home life, and everyday experience.

Intermediate grades: Appreciation of the story in pictures about wild animals, boys and girls in action, and the occupations of men and women.

Grammar grades: Appreciation of the story and of how it is told by selecting and arranging the elements of the picture. First, enjoyment of the composition or design of the picture.

High school: Appreciation of the picture itself, its composition, its technic, its spirit or mood, its personal message.

Of course, these overlap, interlace, flow together, according to the picture, the individuality of the child, and the temperament of the teacher. There are, in the large, but two subjects in picture study—the *story* of the picture and the *art* of the picture; what the artist has to say and how he says it. (The archeological study of the picture—who painted it and when, to what school the artist belonged, where the picture is hung, and how much it is worth—is not picture study, but a phase of history.)¹

Two former State agents for the promotion of manual arts in Massachusetts speak of this subject as follows.

Mr. Frederick L. Burnham² writes:

Grades I, II, III.

The story of the picture.

Application to school work.

Illustrative sketching in color.

Grades IV, V, VI.

In the intermediate grades little formal study attempted.

Added to the story is the study of light and dark and the artist's name.

A beginning is made in picture making by combining simple forms and using values of gray and color.

¹ Henry Turner Bailey, editorial on picture study. School Arts Book, Vol. X, No. 7.

² Deceased.

Grades VII, VIII, IX:

The necessity of unity.

The affinity of parts.

The importance of the language of art to express ideas.

Booklets made by pupils containing a few good pictures and a simple story of the artist's life.

In each room hang a few pictures of sufficient size to command attention and worthy of a lifelong acquaintance. Little know we what influence the pictures to the child's life will lend. I believe in memorizing pictures.

There are many good pictures well suited to children, but the few best should be chosen to become permanent examples of good art. A few technical terms are necessary. The study and comparing of interesting pictures, the making of fine picture books, and the development of simple pictures is possible and desirable.

Mr. Walter Sargent¹ says:

I believe masterpieces of pictorial art should be used in teaching children. My opinion with regard to how children should be led to appreciate their beauties is as follows: The pictures presented to each grade should be such as are appropriate to the age of the children, e. g., the works of Millet are more easily appreciated by young children than those of Michael Angelo.

In primary grades it is sufficient to call attention to the pictures now and then to take one after another of the pictures owned by the school and put each for a few days in some place of prominence, perhaps on an easel; to talk about the story, so the imagination of the child may be set at play under the influence of the picture.

In the intermediate and grammar grades stories of the artist and his country help to an understanding of the picture. Children who are drawing certain things may with profit be referred to pictures where such things are well rendered—for example, houses, trees, people, etc. They may also find help in copying good color harmonies. Further than this, any analysis for technic or composition is of questionable value, so far as æsthetic education of pupils of elementary school age is concerned.

In high school more can be attempted with good results. Even here, however, unless the teacher is herself a lover of art, she would better not attempt to analyze pictures for technic and composition. The problems of composition and technic can be studied equally well from magazine illustrations.

It is of first importance that the teacher should be a sincere lover of whatever work of art she attempts to teach. If she does not care for it herself, she will hardly lead the children to appreciate it. One's desire for appreciation of fine things is usually awakened by realizing the appreciation of others in whose opinion he has confidence.²

Usually from three to six pictures are studied during a year in each grade, and in almost all teaching the subject is closely correlated with English and drawing. Other subjects enter in, according to the kind of picture studied.

Closely associated with the study of pictures is the study of school decoration. This is no doubt largely due to the fact that the room pictures, naturally a most important part of the general scheme of interior decoration, are purchased with the picture study work in mind. Until recently pictures in color have had little or no place in the schoolroom. Original paintings being too costly, and earlier

¹ Professor of art education, Chicago university.

² "Symposium on Picture Study," School Arts Book, Vol. VII, No. 6.

processes of lithography producing inartistic results, the type of picture was necessarily confined to the black and white or Sepia photograph. But the advent of Japanese products for public-school use, including some exceptionally and often remarkably fine color prints, the invention of three and four color processes in printing, color photography, and the successful work in the perfection of lithographic prints by the German, English, and French artists, have led to untold possibilities in the use of colored pictures.

A promising departure from the movable picture is the mural painting. The fact that already State and municipal laws have been passed giving the school building as a place for community gatherings has led the public to consider it as a building of civic pride. As such it demands attention to its decoration. In a number of places public spirit and the united efforts of both school authorities and teachers and pupils has led to the purchase of fine mural paintings. High schools in Trenton, N. J., Decatur, Ill., Oyster Bay, N. Y., and New Brighton, N. Y., show excellent examples of this kind of work. In Chicago mural paintings have been placed in the city schools by students of the art institute. For seven years or more this excellent work has been in progress, with the result that 80 or more panels have been placed on the walls of both grammar and high schools

The schools have, through various methods, paid the expense of canvas, carpentry, paint, and model hire; they have also paid, in all cases, prizes to the winners of the sketch competitions, so that the students who execute the works are not uncompensated. * * * In a building where there are instructed daily some 1,800 children, only 24 of whom were born of American parents, these pictures have a function beyond the purely decorative. In such a room we have represented "Columbus Sailing," the "Landing at Jamestown," "La Salle on the March," "Washington at Cambridge," "Clark on the Way to Vincennes," and "Lincoln." These hundreds of children must grope their way into American traditions, for the Old World traditions of their fathers and mothers do not long hold out against the hard attrition of the American city. The children find in the paintings some hint of this America in the making. And we, when we look at them in an optimistic mood, may be pardoned if we forget how superior in critical faculty we have become, and may find in them a glimpse and a prophecy of art in service as it used to be.¹

All work of this character and spirit is to be most highly commended, and with such an admirable start it should not be long before many other cities containing art schools or with such schools in their vicinity follow Chicago's example.

A discussion of the use of pictures as decoration has been well presented in a talk on schoolroom decoration by Dr. James Parton Haney, director of art in the high schools of New York City. An abstract follows:²

¹ Thomas Wood Stevens, *School Arts Magazine*, Vol. XII, No. 5.

² Reprinted from the *School Arts Book*, Vol. V, No. 5, p. 391.

I. To prevent confusion in discussing problems, it is necessary to distinguish the three ways in which pictures may be used in schools:

- (a) They may be studied for their culture value.
- (b) They may be used as illustrations.
- (c) They may be used as decorations.

The same pictures can not, as a rule, be used for any two of these purposes. Pictures for decoration must be chosen for that particular purpose.

II. The questions involved in the selection and hanging of pictures are questions of design. The problem of decorating a schoolroom is a problem in design. The great aim should be to get pictures of appropriate size and nature well placed. Each wall space when decorated should appear as a simple and pleasing design.

III. The elements to be considered are: (a) Size of wall space; (b) nature of picture; (c) framing; (d) hanging.

IV. Wall spaces: Pictures should be specifically chosen to fill the spaces which offer. Large spaces may require two pictures or even three to fill them properly. In a smaller space, effort should be to have wall space about picture aid to frame it.

V. Choice of subject:

(a) Pictures should appeal to children of the class: Animal, farm, and family scenes for the smaller children. Genre pictures, and those filled with figures, to be avoided. Ditto, architectural subjects in lower grades.

(b) The picture that is strong and simple in composition and "tells the story well" across the room, makes the better decoration.

(c) Unity should be preserved so far as possible in the forms of reproduction shown, i. e., a mixture of etchings, engravings, photogravures, and color prints is to be avoided.

(d) Process pictures, photogravures, and poster color prints are satisfactory. Bright lithographs and imitated water colors are unsatisfactory.

VI. Framing: Simple wood moldings recommended, dark brown, gray, or green, not black or gilt. Large pictures should have broad moldings. No gingerbread decorations. Large carbon prints should be framed without margin. Engraved plates require a liberal margin between picture and frame.

VII. Hanging: Pictures should be hung flat from two hooks. The screw eyes should be at top of frame. In hallways and other large spaces they should be hung just above the eyes. If hung above blackboard, 8 inches' space should be between frame and board. In limited spaces hang pictures in middle of space. Hang casts in same way as pictures. Large, flat, ivory casts are to be preferred.

VIII. Order of general decoration in a school:

(a) Determine chief sites, i. e., halls, stairways, landings, etc. Arrange these in order of their importance.

(b) Fill each in order, choosing pictures suited in size, in subject, and in composition.

IX. Methods of obtaining pictures:

(a) From supply list; (b) from graduating classes, subscriptions, gifts, etc.; (c) from school papers, games, etc.

X. Standards of criticism. What a well-decorated school would show:

(a) Each room would appear a good design, with a few pictures well hung. No one in a space to which it was not adapted.

(b) Nothing on the walls; as burlap, cartridge paper, etc., would distract attention from pictures. No unframed pictures would appear.

(c) There would be a unity in the decorations of the room and in decorations of school as a whole.

(d) Overdecoration—busts, medallions, flags, etc. (particularly of the school platform)—would not be observable.

Plaster casts are important features of decoration and are fast becoming as common in the schoolroom as pictures themselves. They are always a welcome addition to the flat picture and relieve the room of undue monotony. As in the use of pictures, casts should be suited to the grade and room. Of this Mr. Bailey writes:

Whatever the decoration, it should be suited not only to the grade of the room, but to the architectural arrangement. It should be in right relation to the wall space and to the amount of light. If a cast is used, it should be "framed in" or adequately supported in some way, that it may not appear a mere fragment insecurely placed. The amount and direction of light is the determining factor in the placing of a cast. A few fine things perfectly adjusted to all the conditions is the ideal. A cluttered schoolroom is worse than a bare one. A well-decorated room makes its impression first as a whole, as a beautiful piece of color, as a unity within which all the parts are happily related to each other. Such a room affords indescribable satisfaction. "A thing of beauty is a joy forever."¹

Additional decorations used for the interiors of schoolrooms are artistic vase forms, tiles, fine textiles used as curtains or simple backgrounds, window boxes, and flowers. Used as touches of color to enliven an otherwise quiet-toned room, these objects may minister a lasting service to the child. Through the good influences of art magazines, school and other publications, and trained supervisors, the old-time inartistic engravings of great men, busts of the poets, and wall borders of spelling and writing papers are rapidly disappearing, and objects of beauty are taking their place. Where written work or school notices are displayed, neat bulletin boards are everywhere in evidence.

More than ever before, general color schemes and the furniture of the rooms are being carefully considered by boards of education and school architects. As a result many modern schoolrooms are places of delightful resort for the children, who spend nearly half their whole day growing within their walls. Changes in school architecture, light corridors, well-designed stairways, and magnificent auditoriums have all added their part in making the school beautiful.

For a number of years the exterior of buildings has been receiving increased attention. Many schools have practiced the scheme of planting an ivy on graduation day, thus providing for adornment by nature in the years to come. Arbor Day has come to mean more than the planting of one small tree by a whole school. In fact the day is but one of many in which the children plan and execute problems in landscape design. Shrubs and flower beds, school gardens, and grass plats and graded walks are all part of a general decorative scheme, by no means the exception in the modern public school. Though impossible in some large city schools, in congested districts, such wholesome training is easily available in the residential districts,

¹ Editorial, *School Arts Book*, Vol. X, No. 7.

and should prove an indispensable feature of the country and rural school curriculum.

Through such means the children, who are too often confined within the narrow limits of an education for the "struggle of life," will be receiving the beginnings of that "Ideal of Life, Beautiful Living." "Children who are brought up in such an environment will some time be men and women who will not allow dumps, billboards, unkept public grounds, and neglected private yards to disfigure their town."

School and art associations have been directly instrumental in furthering the problem of school decoration, and in a number of instances literature of various kinds has been published upon the subject. In New York State the visual instructions division¹ of the university loans wall pictures to the public schools for a period of one year; also lantern slides on various subjects, including painting and sculpture, and hand photographs for picture study. Circulars listing all subjects are freely distributed and State money is duplicated on approved wall pictures and apparatus for visual instruction. The following are "Suggestions for school decoration," arranged by the Public School Art League and the director of drawing in the public schools, and published by the school committee of Worcester, Mass.:

THE SCHOOL YARD.

General plan.—A carefully thought-out plan of action is exceedingly important in all work. It is especially so in arranging for the beautifying of a school yard. The areas to be devoted to playground, grass plot, trees and shrubs, and flower beds should be thoughtfully considered, and then the varieties of each growth selected with reference to the soil, and the space each is permanently to occupy.

Grass.—A small plot of well-trimmed grass is always pleasing in a school yard. It should be kept in mind, however, that the larger part of the area should be devoted to playground and the smaller portion to the lawn. Usually it is best to select a space at the front or sides of the building or along the boundaries of the yard for the purpose. After the grass is well started it should be clipped at frequent intervals with a lawn mower and the edges of the plot kept neatly trimmed.

Trees and shrubs.—Many varieties of trees and shrubs are suitable for school yards. If possible, those of a hardy nature and quick growth should be chosen. The place of each tree or shrub should be carefully selected in the whole scheme of outdoor decoration, as when once planted they become permanent features.

Vines.—Vines, like trees and shrubs, are excellent for decoration, as after once starting they require little further attention. They are especially desirable about a brick or stone building in that they soften the severeness of the architecture and afford a most pleasing contrast in color. The hardy varieties only should be used. Where a building is concreted about its foundations and the concrete can not be broken, it is often possible to plant the vine just outside the concrete and carry it to the building by a short iron or wood trellis. Unsightly fences, walls, and rocks may also be much improved by carefully trained vines and creepers.

Plants.—Plants in the school yard are desirable when well cared for. Too often, however, a good start is made in the spring, but through lack of care during the sum-

¹ Alfred W. Abrams, chief.

mer vacation, a very discouraging result is reached later in the year. It would seem much more desirable to devote attention to grass, trees, shrubs, and vines at first, and then, if proper care can be given, to take up the problem of plants with the more hardy and vigorous varieties.

Care by pupils, teachers, and janitors.—The pupils, directed by the teachers, should have the largest share in caring for the school yard. It should be a part of their education, and they should feel that they are responsible as a body and individually for its appearance. The sympathy and active help of the janitor are always of great assistance, and every means should be taken to enlist his aid in the work.

List of trees, shrubs, vines, and plants.—To give a list of trees, shrubs, vines, and plants is extremely difficult, inasmuch as the conditions of two school grounds are seldom alike. Sometimes the lot is located at a corner, with two rows of trees along the street, and the building only a short distance from the walk. In this case the trees, with a vine for the building, and a grass plot, are entirely sufficient. Again, if the soil is light and gravelly, it is possible to grow only a few kinds of trees, such as the Norway maples and birches. The less hardy and more ornamental trees and shrubs require at least 18 inches of good soil at the surface, and to this should be added a cart-load of loam for each planting.

In the case of brick buildings care should be taken to select only those growths whose foliage is in harmony with the color of the walls.

In beginning the outdoor work consultation with practical horticulturists is advised. In every district there are men well informed in the subject who will be glad to give advice without the expectation of reward for their services.

TREES.

Cut-leaf Birch.	Catalpa Speciosa.	White Pine.
Mountain Ash.	Carolina Poplar.	Norway Spruce.
Weir's Cut-leaf Maple.	Red Oak.	Fir-Concolor.
Norway Maple.	Pin Oak.	American Hemlock.
Silver-leaf Maple.	Scarlet Oak.	
Schwedler's Maple.	Scotch Larch.	

SHRUBS.

Forsythia Suspensa (Golden Bells).
Blossoms before the leaves appear. April. A graceful, drooping growth.
Forsythia Fortunel. April. Upright and strong growth.
Both of the above should be planted where they will have sunshine.
Deutzia gracilis. White. Early in June.
Deutzia Crenata (Pride of Rochester).
Exchorda Grandiflora. Summer.
Spirea (Van Houtte). White. Last of May. Drooping habit. Four to six feet.
Spirea (Anthony Waterer). Crimson. All summer. Two feet:
Spirea arguta. White. May.
Barberry Thunbergi. June. Green leaves, with metallic luster. Yellow blossom and red berries.
Lilac. Persian. Two varieties, white and purple. Not as coarse growing as the common French variety.
Lilac. Charles X. Reddish purple.
Viburnum plicatum (Japanese snowball). Handsome plicated leaves. Whiter flowers than the common.
Hydrangea paniculata grandiflora. August. White. Flowers remain all winter.
Syringa Philadelphus (Mock orange).
Weigelia Candida. White. June.
Weigelia Rosea. June.
Weigelia Eva Rathke. Summer.
Sumac. Native.

SHRUBS DESIRABLE FOR COLORED FOLIAGE.

Golden Elder. White.
Golden Spirea. White.
Variegated Weigelia. Foliage green, white, and pink.
Variegated Dogwood. Silver-margined. Slow growing, but very desirable.
Purple-leaved Barberry. Red fruit.
All of the above should be planted in the sun to develop the best color.

VINES.

- Ampelopsis Veitchii* (Boston or Japanese ivy). Clings to brick and stone walls without support.
Ampelopsis Quinquefolia (woodbine). Desirable for trellis, walls, and fences.
 Trumpet Vine. Red, trumpet-shaped flowers. Blooms all summer.
Lonicera Japonica Halleana. Nearly evergreen. Continual bloom of delicate, fragrant, cream-colored flowers. Not quite hardy if trained up, but desirable on rocks and walls.
Clematis Paniculata. Strong growth. Covered in September with white flowers.
Clematis Virginia (Virginia Bower). Similar to above.
Lonicera Sempervirens (Scarlet honey-suckle). Scarlet flowers in profusion. Red berries.

HERBACEOUS PLANTS.

- Paeonia*. Different varieties.
 Perennial Phlox. Different varieties.
Gypsophila paniculata. White.
Gaillardia.
Aquilegia (Columbine). Different varieties.
 Asters. Different varieties.
Coreopsis Lanceolata. Yellow.
Delphiniums. Shades of blue.
Helentiums. Shades of yellow.
Hemerocallis Flava (Lemon Day Lily).
Funkia Subcordata (White Day Lily).
Funkia Cœrulea (Blue Day Lily).
Funkia Sieboldi. Green and white foliage.
Dicentra (Bleeding Heart).
 Oriental Poppies. Shades of scarlet and black.
Astilbe Japonica (Japanese spirea). White.
 Golden Glow.

THE SCHOOLROOM.

There should be a definite plan of action in the decoration of each room and corridor that the results in the entire building may form a harmonious whole. To this end the following subjects should be considered: Color of walls, pictures, casts, temporary objects, blackboard drawings, pottery, plants, and flowers.

Color of walls.—This generally receives too little attention. The color and tone of the walls in a schoolroom should depend upon the amount and quality of light which it receives, and this is governed by the point of compass to which the windows open, and by their relative size. The color of the woodwork and walls should be considered together. Where the natural color of the wood can be retained, the effect is very pleasing. If the woodwork is painted, it should be done in light broken tones of color, in harmony with the wall tint, due regard being given to those colors which best withstand the activities of school life. A wall against which pictures and casts are to be placed should have no pattern to confuse the eye. Soft, restful tints should be used—lighter tones in the darker rooms, and darker tones in the lighter rooms. A pleasing effect may be produced by bringing the tints of the ceiling down the side walls to the picture-molding, and completing the remainder of the side walls in one tone of color.

Pictures.—In the selection of pictures, the following suggestions should be noted: Size and general color effect, subject, process of production, cost, frame, and hanging.
Size and general color effect.—For permanent decorations, pictures should not only be large enough to fill the desired space well upon the walls, but the details of the pictures themselves should be sufficiently large and clear to be seen easily across the room. They should be selected also with reference to the color tones of other objects in the room, and to the light which they will receive when placed in position. It is much wiser to wait until sufficient funds for a satisfactory article are secured than to purchase inferior things whenever a little money is accumulated.

Subject.—The subject of the picture is of great importance, and should be selected with special reference to the age and knowledge of the pupils. It is well for the picture to have a direct bearing upon their lives, or upon the subjects about which they are studying. The beauty of the picture is of first importance, however, and should not be sacrificed for the sake of instruction. It should also be remembered

that the cost of a picture, or the reputation of the artist, is not a sure guide as to its value for school purposes.

Process of production.—It is very seldom, indeed, that an original picture can be afforded for the schoolroom. Reproductions must take their place.

Photographs.—A silver print photograph, taken directly from nature or from a fine painting, is probably the best picture without color that can be obtained for a small sum. A silver print will change slightly with time, and for this reason a carbon print, which is permanent, is more desirable. Carbon prints come in several colors, varying from a greenish gray, through various tones of brown, to a deep red brown, suggestive in many cases of the richness of color in the original painting. They are unfortunately somewhat expensive, but one fine, large carbon is worth many of the smaller cheaper prints.

Colored photographs.—Many good colored photographs, especially of architecture and natural scenery, can now be found. When large and simply framed, they are frequently to be preferred to the uncolored photographs of the same subject.

Half tones.—Large half tones are obtainable at a low price, but vary greatly in quality. Where cost is an important item they should be considered.

Solar prints.—Solar prints are comparatively inexpensive, but somewhat liable to fade. Many large architectural pieces are quite satisfactory at their price and may be used to advantage in large rooms and corridors. Fine examples may be seen in the magazine reading room at the public library.

Photogravures.—Good photogravures are excellent as reproductions, and as their cost is relatively about the same as that of carbon photographs they should be considered together.

Lithographs.—Lithographs, like half tones, are inexpensive and should be used when cost must be the first consideration.

Colored lithographs.—These vary greatly in quality. Those reproduced from famous paintings are usually not at all desirable, but those made from pictures painted for this special purpose are exceedingly good. They are delightful in color, and being usually large and inexpensive should certainly have an important part in schoolroom decoration. This process of reproduction for water-color paintings is such that it is frequently difficult to distinguish a print when framed from the original painting.

Reference is specially made to those of Reviere, Paris; Teubner, Leipzig; Prang, Boston.

Cost.—The list of pictures and casts to be found on a succeeding page is not intended to be complete, but to suggest those things that seem best adapted to schoolroom decoration at the present time. In selecting, reference may be had to the collection of catalogues at the office of the superintendent of schools. Further information may then be had of the local dealers or of the Art League. Importations may be made through the league free of duty. This in many cases will materially reduce the cost of the better class of pictures.

Frame.—Many otherwise pleasing pictures are spoiled by poor framing. The object of the frame is to serve as a break between the surrounding background and the picture, and not as a piece of decoration in itself. It should be a plain band of wood of a width suitable for the picture and harmonizing with it in color. If a mat is used, it should be in harmony with both picture and frame as to size and color. The picture and frame should form one harmonious whole, of which the picture itself should be the center of interest.

Hanging.—When the picture is framed and placed upon the wall it no longer stands alone as a separate thing, but forms a part of the whole scheme of decoration. It should hang nearly flat from the molding, as low as it can be well placed, and should then seem to form a component part of a well-planned, harmonious room.

Casts.—Casts are beautiful for their line and mass, and when made from sharp molds are nearly as fine as the original model. The difference between a good and a poor

cast can be told, as a rule, by the price, cheap casts being made from worn-out molds. Great care should be taken in selecting casts for the above reason. They should be so placed in the schoolroom that they receive the light from one side, if possible, in order to accent the relief to the best effect. Generally speaking, one large cast is sufficient for any ordinary schoolroom.

Temporary objects.—Objects placed in the room temporarily should express the fact frankly. It is almost impossible to keep such things in harmony with their surroundings, their usefulness being sufficient excuse for their presence. They should be removed as soon as their purpose is served and not allowed to remain to become covered with dust.

Blackboard drawings.—Pictures drawn upon the board are for purposes of instruction, not for decoration, and, like all temporary things, should be done away with when they have fulfilled their mission.

Pottery.—Selections of pottery should be made with care. Large pieces, simple in line and good in color, are desirable, but are unfortunately generally expensive. The cheap, overdecorated wares with which many shops are filled should be carefully avoided. One or two pieces well placed about a room add greatly to its appearance. Reproductions of antique brass, copper, and pewter are also desirable, as many of the pieces are beautiful in line, while the color of the metal adds a pleasing note to the general color scheme.

Plants and flowers.—A few well-kept, thrifty plants, with or without flowers, add to the cheerfulness of a schoolroom. The more hardy palms and ferns, when placed in drip glaze jars of simple form and beautiful color, are desirable and afford a very effective decoration. Children delight in bringing the teacher bunches of all sorts of blossoms, frequently with stems so short that it is not easy to put them in water. There is no beauty in such a bouquet, and no encouragement should be given it. A mass of flowers of one variety, well arranged, in an appropriate vase or jar, is beautiful while fresh. In all cases the flower or flowers should be in harmony with the receptacle and should not produce a feeling of being overcrowded. Branches and blossoms and a few flowers are also capable of fine arrangements independent of vases. In the grammar grades and in the high schools a committee of pupils might be appointed to take charge of this method of decoration. Care should always be taken that the flowers are fresh and that none whose pollen is irritating are used within doors.

PICTURES.

Italian Art.	Italian Art—Continued.
Albertinelli: The Visitation.	Correggio: Madonna in Adoration. Holy Night.
Angelico: Coronation of the Virgin.	Da Credi: Madonna of the Adoration.
Bartolommeo: Two Angels. Virgin and Child with Saints.	Da Forlì: Angels. (Series.)
Bellini: Virgin Enthroned.	Da Vinci: The Last Supper. Mona Lisa.
Botticelli: Coronation of the Virgin. Fortitude. Holy Family. Madonna. (London.) Minerva.	Del Sarto: Holy Family. (Florence.) Madonna of the Harpies. (Details.) St. John.
Carlo Dolce: Poetry. St. Cecilia. Virgin and Child.	Domenichino: Cumean Sibyl. Diana's Hunt.
Carpaccio: Angel with Mandolin. St. George and the Dragon. Triumph of St. George.	Donatello: St. George.
	Ghirlandajo: Head of the Angel. Head of St. Elizabeth. Head of the Virgin.

Italian Art—Continued.

lone:
 he Concert.
 o:
 ante.
 o Reni:
 aurora.
 ater Dolorosa.
 St. Michael.
 i:
 Coronation of the Virgin.
 to:
 Three Ages of Man.
 ni:
 Virgin of the Rose Trellis.
 ntegna:
 Virgin Enthroned with Angels.
 saccio:
 Tribute Money.
 chael Angelo:
 Prophets. (Sistine Chapel.)
 Sibyls. (Sistine Chapel.)
 alma Vecchio:
 St. Barbara.
 aphael:
 Burning of the Castle.
 Foligno Madonna.
 Holy Family.
 Justice. Philosophy. Poetry.
 Liberation of St. Peter.
 Madonna of the Cardinal.
 Madonna of the Chair.
 Madonna of the Fish.
 Madonna of the Grand Duke.
 Sistine Madonna.
 Parnassus. (Detail.)
 Portrait of Himself.
 School of Athens.
 Sibyls.
 St. John in the Desert.
 St. Cecilia.
 Two Angels from Baldechino Madonna.
 Transfiguration. (Details.)
 Titian:
 Bella.
 Flora.
 Magdalen.
 Presentation of the Virgin.
 The Assumption.
 Three Graces.
 Veronese:
 Industry.
 Angel with Mandolin.
 Verocchio:
 Two Angels.
 French Art.
 Adam:
 The Cat Family.
 Bastien-Lepage:
 Joan of Arc.
 Bashkirtseff:
 The Meeting.
 Rosa Bonheur:
 Ploughing.
 The Horse Fair.

French Art—Continued.

Rosa Bonheur—Continued.
 Brittany Cattle.
 Brittany Sheep.
 Deer in the Forest.
 Bouguereau:
 Little Scholar.
 Breton:
 Song of the Lark.
 Corot:
 Lake Nemi.
 Spring.
 The Lake.
 Daubigny:
 Spring.
 Dagnan-Bouveret:
 At the Watering Trough.
 Dupré:
 The Balloon.
 The Haymakers.
 Gérôme:
 The Two Majesties.
 Greuze:
 Child with Apple.
 Broken Jar.
 Jacque:
 The Sheepfold.
 Le Brun:
 Portrait.
 Mother and Child.
 Lerolle:
 By the Riverside.
 Shepherdess and Sheep.
 Lorrain:
 Harbor at Sunset.
 Marcke:
 The Water Gate.
 A Golden Autumn Day.
 The Mill.
 Millet:
 The Angelus.
 The Gleaners.
 The Shepherdess.
 The Sower.
 The First Step.
 Feeding Her Birds.
 Feeding the Hens.
 The Goose Girl.
 Regnault:
 Horses of Achilles.
 Renouf:
 A Helping Hand.
 Rousseau:
 Sunset in Forest.
 Troyon:
 Oxen Going to Work.
 Oxen Ploughing.
 Flemish Art.
 Alma-Tadema:
 Reading Homer.
 Rubens:
 Holy Family.
 Infant Christ and St. John.

Flemish Art—Continued.

Rubens—Continued.

King David with Harp.
Portrait of Himself.
Portrait of Maximilian I.

Van Dyck:

Baby Stuart.
Children of Charles I.
Lord Wharton.
Portrait of Himself.
Prince Karl.
Prince Rupert.
Repose in Egypt.
William II, Prince of Nassau.

Van Eyck:

Angel of Annunciation.

Dutch Art.

Dou:

Cat in Window.
Soap Bubbles.

Hackaert:

Avenue of Ash Trees.

Hals:

Jolly Man.
Man with Sword.
Singing Boy.

Hobbema:

Avenue of Trees.
The Mill.
The Water Mill.

Mauve:

Sheep. Autumn.
Sheep. Spring.

Potter:

The Wolf Dog.

Rembrandt:

Abraham and Angels.
Meeting of David and Absalom.
Portrait of Himself.
Portrait of Mother.
Portrait of Wife.
The Mill.
The Night Watch.
The Polish Rider.

Ronne:

A Fascinating Tale.
The Final Move.

Ruysdael:

The Mill.

Ter Borch:

The Concert.

German Art.

Bodenhausen:

Madonna.

Durer:

Christ in the Temple.
The Four Apostles.

Hoffman:

Worship of the Wise Men.
The Childhood of Christ.

Holbein:

Christine of Denmark.
Madonna of the Meyer Family.
Portrait of Edward VI.
Portrait of Himself.

German Art—Continued.

Linbach:

Wagner.
Bismarck.

Menzel:

A Reader.

Meyer von Bremen:

The Pet Bird.

Plockhorst:

The Good Shepherd.

Richter:

Queen Louise.

Schreyer:

An Arab.
Arabs in the Desert.
Halt in the Oasis.

Suttermans:

Prince of Denmark.

Uhde:

Christ and the Peasants.

Spanish Art.

Murillo:

Children of the Shell.
Divine Shepherd.
Holy Family.
Immaculate Conception.
Melon Eaters.
St. John as a Child.
Virgin and Child.

Velasquez:

Infant Maria Theresa.
Portrait of a Youth.
Prince Balthazar.
The King's Family.

English Art.

Burne-Jones:

Golden Stair.
Praise of Venus.

Constable:

Valley Farm.
Cornfield.

Crane:

The Mower.

Dicksee:

The Child Handel.

Douglass:

Ancient Britons.

Gainsborough:

Blue Boy.
Duchess of Devonshire.
Mrs. Siddons.

Herring:

A Scanty Meal.
A Society of Friends.

Lawrence:

Benjamin West.
Princess Charlotte.
Sir Walter Scott.

Landseer:

Connoisseurs.
Dignity and Impudence.
Distinguished Member of the Humane Society.
King Charles Spaniels.
Saved.
Shoeing the Horse.
Sleeping Bloodhound.

English Art—Continued.

Leighton:
Greek Girls Playing Ball.
Reynolds:
Age of Innocence.
Duchess of Devonshire and Daughter.
Infant Samuel.
Turner:
Approach to Venice.
Slave Ships.

American Art.

Alexander:
Pot of Basil.
Anderson:
Foundling Girls.
Barnes:
Family Cares.
Blashfield:
Christmas Chimes.
Boughton:
Evangeline.
Pilgrim Exiles.
Pilgrims Going to Church.
Priscilla.
Return of the Mayflower.
Brush:
Mother and Child.
Copley:
Samuel Adams.
John Hancock.
Harrison:
Amateurs.

American Art—Continued.

Homer:
Fog Warning.
Lookout, "All's Well."
Inness:
Autumn Gold.
Landscape.
McCord:
Evening in the Harbor.
Peale:
George Washington.
Sargent:
Prophets' Frieze.
Carnation Lily, Lily Rose.
Thayer:
Caritas.
Stuart:
Chief Justice Jay.
George Washington.
Martha Washington.
John Adams.
Thomas Jefferson
Trumbull:
Signing the Declaration of Independence.
Surrender of Burgoyne.
Alexander Hamilton.
Whistler:
Head of Blacksmith.
Little Rose.
Portrait of Mother.

ARCHITECTURE AND SCENERY.

Egypt.

Nile and Pyramids.
Pyramids of Cheops.
Pyramids and Desert.
Temple of Karnak.
Temple of Phææ.

Greece.

Erectheum.
Parthenon.
Temple of Minerva.
The Acropolis.

Italy.

(Florence.)

Baptistry.
Campanile.
Cathedral and Campanile.
Loggia dei Lanzi.
Pitti Palace.
Ponte Vecchio.

(Milan.)

Cathedral.

(Rome.)

Aqueduct of Claudius.
Arch of Constantine.
Arch of Titus.
Arch of Septimus Severus.
Appian Way.
Baths of Caracalla.
Capitol.
Castle and Bridge of St. Angelo.
Colosseum.
Forum and Arch of Titus.

Italy—Continued.

(Rome)—Continued.

Forum and Trajan's Column.
Forum and Temple of Antinous.
Grand Panorama of Rome.
Interior of St. Paul's.
Palace of the Caesars.
Palace of Tiberius.
Pantheon.
Temple of Vesta.
Temple of Peace.
Trajan's Column.
Trajan's Column and Arch of Titus.
Vatican.

(Venice.)

Bridge of Sighs.
Ducal Palace.
Grand Canal.
Rialto.
St. Mark's.
Church of the Salute.

(Verona.)

Amphitheater.

Spain.

Alhambra.
Court of Lions.
Court of Myrtles.
Hall of the Ambassadors.
Mosque of Cordova.

France.

Amiens Cathedral.
Notre Dame.
Rheims Cathedral.
Rouen Cathedral.

Germany	England—Continued.
Cologne Cathedral.	The Tower
Heidelberg Castle.	Warwick Castle.
	Windsor Castle.
Turkey.	Westminster Abbey.
St. Sophia.	
England.	United States.
Ann Hathaway's Cottage.	Capitol at Washington.
Durham Cathedral.	Niagara Falls.
Houses of Parliament.	Lower Falls, Yellowstone Park.
Lincoln Cathedral.	Washington's Home, Mount Vernon.
Peterboro Cathedral.	Yosemite Valley, El Capitan.
Shakespeare's House.	Yosemite Valley, Mirror Lake.

FAMOUS MEN AND WOMEN.

Bancroft, George.	Longfellow, Henry W.
Columbus, Christopher.	Washington, George.
Franklin, Benjamin.	Washington, Martha.
Lincoln, Abraham.	Whittier, John G.

PHOTOGRAPHS OF STATUARY.

Hermes of Praxiteles.	Lion of Lucerne.
Lion on Eagle's Back. (Thorwaldsen.)	Memnon of Thebes.

UNCLASSIFIED.

Colored Lithographs.	English Prints.
Teubner Prints.	Fitzroy Pictures.
Boightlander Prints.	Color Plates from Book, Carton Moore Park.
Riviere Prints.	Landscape Reproductions, Thaulow.
Mucha Prints.	Landscape Reproductions, Boecklin.
Dutch Prints.	

Refer to complete catalogue of P. P. Caproni & Bro.

CASTS.

516. Boy and Goose.	7085. Dancing Girls.
522. Suppliant Youth.	7086. Eleusinian Relief.
531. Boy Extracting Thorn.	8350-8359. The Cantoria Frieze.
2511. Cherub and Dolphin.	8362. Bambino.
2505-2506. Cherubs with Shields.	8363. Bambino.
4037. Hypnos.	8372. Madonna and Child.
5151. Boy.	8373. Madonna and Child.
5152. Infant Christ.	8383. Madonna and Child.
5153. Young Girl.	8384. Madonna and Child.
5154. St. John.	8403a. Cherub.
5155. Young Girl.	8404a. Cherub.
5163. Infant Christ.	8405. Cherub.
5166. Dante.	8407a. Cherub.
5193. David.	8408. Cherub.
5400. Longfellow.	8408a. Cherub.
5415. Bancroft.	8411. Madonna and Child.
5422. Hawthorne.	10007. Triumph of Alexander.
5424. Irving.	10009. Flight of Night.
5433. John Adams.	10014-10019. Nymphs.
5440. Columbus.	10024-10025. Cupids.
5446. Franklin.	10028-10029. Cupids.
5448. Lincoln.	10041. Cupids Singing.
5449. Lincoln.	12800. Bear Dancing.
5457. Washington.	12804. Elephant Walking.
5470. Mercury.	12805. Elephant Running.
6017. Whittier.	12806. Lion.
7000-7003. The Parthenon Frieze.	12819. Tiger.
7054. Nike.	18801. Frieze.
7074-7075. Chariot Race.	18909. Torch Holder.
7082. Antinous.	18984. Gothic Spandril.

F. MATERIALS AND EQUIPMENT.

Materials for the work in drawing were necessarily limited in the early days. Paper was used sparingly and work of the pupils was confined to slate pencil and slate or blackboard, neither surface especially adapted to acceptable qualities of technic. High-school departments, however, and teachers of drawing were able to procure an extensive line of material available for the more advanced work, drawing which aimed for the most part at the higher branches of art, such as painting, sculpture, or architecture.

A partial list of such material, taken from Walter Smith's "Art Education," 1873, follows:

Simpson's 12 plates of Outlines for Blackboard. 7s.

Delarnes' Free-hand Outlines of Common Things, 48 subjects. 5s.

Copies for Outline Drawing.

Delarnes' Outlines of Animals. 1s.

Dyce's Elementary Outlines of Ornament. 5s.

Morphen's Outlines of the Human Figure, 20 plates. 3s. 4d.

Albertollis' Foliage, 4 plates (size 20 by 8 inches). 5d.

Copies for Shaded Drawing.

Renaissance Rosette, unmounted. 3d.

Ornament from a Greek Frieze, unmounted. 3d.

Early English Capital, unmounted. 4d.

Renaissance Scroll, Tomb in S. M. Dei Frari, Venice. 1s. 4d.

Architectural and Machine Drawing.

Selected Examples of Machines of Iron and Woodwork (French), by Stanislas Petit.

60 sheets, at 13s. per dozen. £3 5s.

Architectural Studies, by I. B. Trifou, 20 plates. £1 13s. 4d.

Engineer and Machinists Drawing Book, 71 plates. £1 12s.

Laxton's Examples of Building Construction in Divisions. 10s.

Colored Examples.

A small diagram of color, unmounted. 9d.

Redgrove's Manual and Catechism in Color. 9d.

Two Plates of Elementary Design. 1s.

Cotman's Pencil Landscapes (nine), set, mounted. 10s.

Solid Models, etc.

Slip, two set squares and T square. 5s.

Elliott's case of instruments. 6s. 9d.

Elliott's Prize Instrumental Case with 6-inch compasses, pen and pencil leg, two small compasses, pen and scale. 18s.

A box of models for parochial schools. £1 4s.

Mr. Binn's Models for Illustrating the Elementary Principles of Orthographic Projection as applied to Mechanical Drawing, in box. £1 10s.

Three Objects of Form in Pottery (Minton's): Indian Jar, 5s.; Celadon Jar, 3s. 9d.; bottle, 5s.

Five selected Vases in Majolica Ware (Minton's) each 8s. 6d., £1 2s. 6d.

Three selected Vases in Earthenware (Wedgewood's) 4s. 9d., 4s. 9d., and 6s.

Books, etc., followed, mainly on perspective, linear drawing, and geometry.

To-day charts and outline drawings for copy are seldom in evidence. A number of excellent textbooks are published and are not only graded, but adapted to special phases of art teaching and the different seasons of the year. The illustrations are examples of the finest of reproductions in outline, light and shade, and color, from original drawings by the best of American artists. Loose-leaf texts are also published by various houses and assist materially in supplementing the teachers' outlines. With the abolition of the slate, papers adapted to various media were soon forthcoming. The present supply list of the city supervisor contains from 4 to 10 or more different kinds and colors of drawing paper. Such lists include:

White paper for pencil, crayon, or water color.

Colored paper for pencil, crayon, or water color.

Japanese or onion skin paper for brush or tracing.

Bogus paper for drawing or handwork.

Construction papers in colors for handwork.

Stencil paper.

White paper for mechanical drawing.

Duplex paper for mechanical drawing.

Cross section papers.

Charcoal paper.

Colored papers for mounting.

Blotting papers for mounting.

Cardboard for mounting.

Transfer paper and tracing cloth and paper.

Blue print paper.

Following the advent of manual training, arts and crafts, and elementary handwork, many new mediums came into use which include:

Cardboard for box, folio, etc., construction.

Clay for modeling and pottery.

Plastercine for modeling and pottery design.

Wood for whittling or heavier bench work.

Brass and copper for crafts work.

Reeds and raffia for basketry.

Yarns, strings, and jute for weaving.

Textiles for stenciling or appliqué.

Leather for tooling, etc.

Advanced classes in well-equipped high schools use in addition to the above, silver, enamels, and semiprecious stones for work in jewelry. Vocational courses employ all mediums applicable to the trade or vocation.

Additional mediums which are in daily use include pencils of various grades, from very soft sketching pencils to very hard pencils

used for mechanical drawing, colored crayons of a more or less waxy composition, colored chalks, charcoal, and water color, both in tubes and cakes. "Tempera" water colors (opaque colors) have very recently been placed before the pupils and require colored papers for use. These are a very effective and quick working medium, which were first introduced from foreign countries. Boxes for water colors vary from the "three-color box," containing what has been termed "standard red, yellow, and blue," to boxes containing six, eight, and more colors. There is but little difference in the various makes of school colors, though their qualities of permanence are necessarily greatly inferior to those in professional use. Brushes of camel's hair are usually supplied with each box.

The Japanese have been instrumental in placing many useful and inexpensive materials before our schools for use in drawing. Such materials are brushes, wood block prints in black and white and color, stencils, books of nature drawing and designs, papers for drawing and mounting and decorative vase forms.

The following materials are also in constant use in the modern school system:

Scale rules.	Erasers.	Models.
Compasses.	Scissors.	Dyes.
Drawing "kits" (boards with T square and tri- angle.	Looms. Water pans. Paste.	Stencil brushes. Stencil knives.

In the average grades nothing but movable equipment is employed for the drawing work. High schools, however, with special teachers and special courses provided equipment to conform with the requirements of advanced work. Rooms are architecturally designed to meet lighting and other conditions for such study. Cabinets especially designed for holding casts, still life, portfolios, drawing papers, drawing boards, and individual supplies are installed. Special adjustable tables and model stands are provided and in addition casts, pottery forms, and other objects for drawing. Drawing boards, instruments, T square and triangles, blue print frames, and drawing inks are supplied.

In the newer technical and city high schools facilities are offered for courses in the industrial and applied arts. These include metal and jewelry equipment, benches, jewelers' saws, files, blowpipes, vises, burnishers, chasing tools, hammers, etc.; pottery and ceramic equipment, kiln, potter's wheel, molds, cabinets to hold partially completed work and materials for glazing and decorating; textile equipment, looms, and necessary material for weaving. Courses in art advertising, millinery, and custom design, interior decoration and commercial design include equipment already enumerated and in addition material from which to obtain ideas. For this purpose schools in a

few localities have come to realize the value of the museum and such objects as stuffed animals, fishes, birds, etc.; and objects of ancient craftsmanship are borrowed.

The need of these special courses in the industrial and applied arts is constantly growing, and with them must come the school museum, a feature which should be in the equipment of every school, with or without special courses.

Two magazines are published which are of direct help to the work of the public schools—the “School Arts Magazine,” edited by Henry Turner Bailey, of North Scituate, Mass., formerly Massachusetts State agent for drawing, and the “Manual Training Magazine,” edited by Charles S. Bennett, director manual arts department, Bradley Polytechnic Institute, of Peoria, Ill. A magazine for vocational schools, called “The Vocational Magazine,” has been recently published by Mr. Bennett. This is, however, of less direct help along art lines.

The School Arts Magazine, originally issued in September, 1901, as “The Applied Arts Book,” and edited by Frederick H. Daniels, became “The School Arts Book” in 1903. It was again changed in name, and this time in size, in 1912, and is called “The School Arts Magazine.” It is a finely illustrated publication, filled with practical and timely suggestions covering all phases of public school art work, and published 10 months in the year. It is adapted to both grade teacher and supervisor and is of great value in the schoolroom itself.

“The Manual Training Magazine,” originally published four times a year, is now issued in October, December, February, April, and June. It is a well-printed magazine containing helpful problems and excellent articles on the manual arts in the public schools. It is especially adapted for the use of the manual training teacher and supervisor of elementary handwork.

Following are statements showing lists of supplies prescribed for San Francisco and for Boston:

We use no drawing books and the board of education supply no models or charts. White, bogus or onionskin paper is supplied to the pupils, but they purchase their own color media.

All drawings are done in color or brush and ink, the lead pencil being used only for the preliminary exercises.

Water colors are not obligatory, but we used in some schools, generally grammar schools, the color media in general use, in an eight-color box of crayograph in Grades I, II, and III.¹

LIST OF SUPPLIES AS OUTLINED FOR BOSTON.

Equipment is replenished in September on the basis of principals' reports for which blanks are furnished in March.

Grades I, II, and III are furnished scissors (4½-inch), one pair to two pupils; to be used in sets, each set shared by two classes.

¹ Miss Katherine M. Ball, supervisor, San Francisco, Cal.

Supplies are furnished in September and January on the basis of principals' reports for which blanks are furnished in March and September.

The list shows the various articles supplied, and the annual quota of each.

GRADE I.

Tubes of paste, 2 to 20 pupils
 Drawing paper, gray, 6-inch by 9-inch, 160 sheets to each pupil.
 Drawing paper, white, 6-inch by 9-inch, 16 sheets to each pupil.
 Drawing paper, gray, 12-inch by 18-inch, 1 sheet to each pupil.
 Printed illustrations (Santa Claus), 1 to each pupil.
 Pencils, Dixon's Special Black, No. 312, 1 to each pupil.
 Pasteboard rules, 1 to each pupil.
 Colored crayons, 2 boxes to 3 pupils.¹

GRADE II.

Tubes of paste, 2 to 20 pupils.
 Drawing paper, gray, 6-inch by 9-inch, 160 sheets to each pupil.
 Drawing paper, white, 6-inch by 9-inch, 16 sheets to each pupil.
 Drawing paper, gray, 12-inch by 18-inch, 1 sheet to each pupil.
 Printed illustrations (Santa Claus), 1 to each pupil.
 Pencils, Dixon's Special Black, No. 312, 1 to each pupil.
 Pasteboard rules, 1 to each pupil.
 Paper fasteners, $\frac{1}{4}$ -inch, 1 box to 100 pupils.
 Envelopes, 8-inch by 11-inch, 1 to each pupil.
 Colored crayons, 1 box to 2 pupils.²
 White gummed stars, 1 box to 7 pupils.
 Balls of gray twine 1 ball to 50 pupils.

GRADE III.

Tubes of paste, 2 to 20 pupils.
 Drawing paper, gray, 6-inch by 9-inch, 160 sheets to each pupil.
 Drawing paper, gray, 9-inch by 12-inch, 4 sheets to each pupil.
 Drawing paper, white, 6-inch by 9-inch, 16 sheets to each pupil.
 Drawing paper, white, 9-inch by 12-inch, 4 sheets to each pupil.
 Printed illustrations (flags), 1 to each pupil.
 Tracing paper, 6-inch by 9-inch, 4 sheets to each pupil.
 Pencils, Dixon's Special Black, No. 312, 1 to each pupil.
 Pasteboard rules, 1 to each pupil.
 Balls of gray twine, 1 to 50 pupils.
 Bristol board, gray, 5 $\frac{1}{2}$ -inch by 7-inch, 2 sheets to each pupil.
 Envelopes, 8-inch by 11-inch, 1 to each pupil.
 Colored crayons, 1 box to 2 pupils.²

DRAWING.

Grades IV, V, VI, VII, VIII.

Water-color brushes, 1 to each pupil.
 Water-color boxes, long, with red, blue, yellow, and black, 1 to 2 pupils.
 Water cups, 1 to 2 pupils.
 Pairs scissors, 4 $\frac{1}{2}$ -inch (Grades VI to VIII), 1 to 2 pupils.
 In grades IV and V use 6-inch manual training scissors (4 $\frac{1}{2}$ -inch in girls' schools), see Manual Training.
 Atomizer (for teachers of Grade VIII), 1 to group of classes.

MANUAL TRAINING.

Cardboard construction—Grade I V.

Pairs scissors, 6-inch (for drawing also), 1 to 2 pupils.
 Rules, $\frac{1}{4}$ -inch, 1 to 2 boys.
 Rules, $\frac{1}{8}$ -inch, 1 to 2 boys.
 Triangles, 1 to 2 boys.
 Compass attachments, 1 to 2 boys.
 Conductor's punches, 1 to 10 boys.
 Trybom's "Cardboard Construction," 1 to class.

Bookbinding—Grade V.²

Pairs scissors, 6-inch (for drawing also), 1 to 2 pupils.
 Rules, $\frac{1}{8}$ -inch, 1 to 2 boys.
 Triangles, 1 to 2 boys.
 Paste brushes, 1 to 5 boys.
 Eyelet punches, 1 to 25 boys.

Weaving—Grade VI.

Pairs scissors, 4 $\frac{1}{2}$ -inch (for drawing also), 1 to 2 pupils.
 Rules, $\frac{1}{8}$ -inch, 1 to 2 boys.
 Small looms, 1 to each boy.
 Large looms, as desired.

¹ These crayons with those left over should be sufficient to supply each pupil with a box.

² To be used in sets, each set shared by two classes.

GRADE IV.

Drawing.

Drawing paper, gray, 9-inch by 12-inch, 50 sheets to each pupil.
 Drawing paper, white, 9-inch by 12-inch, 24 sheets to each pupil.
 Tubes of paste, 2 to 30 pupils.
 Pencils, Dixon's S, 141, 1 to each pupil.
 Cakes of color, red, blue, and charcoal gray, 1 dozen each to 50 pupils.
 Cakes of color, yellow, 1 dozen to 25 pupils.
 Erasers, 1 to 2 pupils.
 Envelopes, 10-inch by 13-inch, 1 to each pupil.
 Colored crayons, hydraulic pressed,¹ 1 box to 2 pupils.

Grade IV—Manual training.

Gray twine, 1 ball to 18 boys.
 Pencils, Dixon's H, 1 to each pupil.
 Screenings, 24-inch by 36-inch, green, 1 sheet to each boy.
 Bristol board, 22-inch by 28-inch, 3 colors, 6 sheets to each boy.
 Tubes of paste, 1 tube to 4 boys.

GRADE V.

Drawing.

Drawing paper, gray, 9-inch by 12-inch, 50 sheets to each pupil.
 Drawing paper, white, 9-inch by 12-inch, 24 sheets to each pupil.
 Tubes of paste, 2 to 30 pupils.
 Pencils, Dixon's S, 141, 1 to each pupil.
 Cakes of color, red, blue, and charcoal gray, 1 dozen each to 50 pupils.
 Cakes of color, yellow, 1 dozen to 25 pupils.
 Erasers, 1 to 2 pupils.
 Envelopes, 10-inch by 13-inch, 1 to each pupil.
 Bristol board, 22-inch by 28-inch, 3 colors, 1 sheet to 5 pupils.
 Pasteboard mount, 9½-inch by 12½-inch, 2 sheets to each girl.
 Colored crayons, hydraulic pressed,¹ 1 box to 2 pupils.

Manual training.

Needles, tapestry, 1 paper to 25 boys.
 Balls, macrame cord (black), 1 ball to 75 boys.
 Screenings, 24-inch by 36-inch, green, 1 sheet to each boy.
 Boxes of eyelets, 1 box to 25 boys.
 Newsboard, 13-inch by 19-inch, 4 sheets to each boy.
 Vellum de luxe, green, 2 yards to 3 boys.
 Paper, Trimont Mills, 2 reams to 50 boys.
 Lining paper, green, 24-inch by 36-inch, 1 sheet to each boy.
 Paste, pints, 2 pints to 7 boys.
 Cover paper, 20-inch by 25-inch, green, 2 sheets to 3 boys.
 Cotton tape, ½-inch, white (4 yards), 1 piece to 10 boys.
 Cotton tape, ½-inch, green (12 yards), 1 piece to 30 boys.
 Linen thread, 1 skein to 25 boys.

GRADE VI.

Drawing.

Drawing paper, gray, 9-inch by 12-inch, 50 sheets to each pupil.
 Drawing paper, white, 9-inch by 12-inch, 24 sheets to each pupil.
 Tubes of paste, 2 to 30 pupils.
 Gray bristol board (5½-inch by 7-inch), girls' schools, 1 to each girl.
 Half tones (3 pictures), 1 to each pupil.
 Pencils, Dixon's S, 141, 1 to each pupil.
 Cakes of color, red, blue, and charcoal gray, 1 dozen each to 50 pupils.
 Cakes of color, yellow, 1 dozen to 25 pupils.
 Erasers, 1 to 2 pupils.
 Envelopes, 10-inch by 13-inch, 1 to each pupil.
 Colored crayons, hydraulic pressed,¹ 1 box to 2 pupils.

Manual training.

Raffia, ½ plain, ½ colored (4 colors), 3 pounds to 20 boys.
 Warp thread, brown, 1 spool to 6 boys.
 Rovings, 2 colors, 1 spool to 8 boys.
 Jute, ½ plain, ½ colored (3 colors), 1 spool to each boy.
 Cotton yarn (white), 3 balls to 2 boys.
 Needles, tapestry, 1 package to group of classes.

GRADE VII.

Drawing.

Drawing paper, gray, 9-inch by 12-inch, 50 sheets to each pupil.
 Drawing paper, white, 9-inch by 12-inch, 24 sheets to each pupil.
 Tubes of paste, 2 to 30 pupils.

¹ To be used in sets, each set shared by two classes.

Drawing paper, manila, 9-inch by 12-inch, 9 sheets to each pupil.
 Tracing paper, 8½-inch by 14-inch, 3 sheets to each pupil.
 Half tones (3 pictures), 1 to each pupil.
 Pencils, Dixon's 8, 141, 1 to each pupil.
 Cakes of color, red, blue, and charcoal gray, 1 dozen each to 50 pupils.
 Cakes of color, yellow, 1 dozen to 25 pupils.
 Erasers, 1 to 2 pupils.
 Envelopes, 10-inch by 13-inch, 1 to each pupil.
 Gray bristol board (5½-inch by 7-inch), girls' schools, 3 sheets to 2 pupils.
 Colored crayons,¹ 1 box to 2 pupils.

GRADE VIII.

Drawing.

Tubes of paste, 2 to 30 pupils.
 Drawing paper, gray, 9-inch by 12-inch, 50 sheets to each pupil.
 Drawing paper, white, 9-inch by 12-inch, 24 sheets to each pupil.
 Drawing paper, manila, 9-inch by 12-inch, 9 sheets to each pupil.
 Tracing paper, 8½-inch by 14-inch, 3 sheets to each pupil.
 Half tones (4 pictures), 1 to each pupil.
 Pencils, Dixon's 8, 141, 1 to each pupil.
 Envelopes, 10-inch by 13-inch, 1 to each pupil.
 Gray bristol board (5½-inch by 7-inch), girls' schools, 3 sheets to 2 pupils.
 Cakes of color, red, blue, and charcoal gray, 1 dozen each to 50 pupils.
 Cakes of color, yellow, 1 dozen to 25 pupils.
 Erasers, 1 to 2 pupils.
 Bottles of Fixatif, 1 to group of classes.
 Colored crayons,¹ 1 box to 2 pupils.

G. ART CLUBS AND ASSOCIATIONS.

School art clubs and teachers' associations have acted as a strong influence in furthering art education. Through annual reports, conferences, public meetings, and exhibits they have operated for the welfare of the schools of the country.

Following is a list of such associations and clubs:

PROFESSIONAL.

Massachusetts Art Teachers' Association.—Prior to the establishment by the legislature of the Massachusetts State Normal Art School the idea of a mutual association of art teachers was considered at a meeting called by Walter Smith, the State director, in May, 1873. This organization was effected the following year by the members of the first class of the new school, the object being "the general advancement of art education in America and the mutual improvement of the members." Students fulfilling certain requirements, teachers, and professors were eligible to membership. The association, however, was short-lived, for various reasons. The changing from temporary quarters to a new building, the addition of many more pupils, of less keen appreciation of the early efforts of the first class, and hurried preparation for an extensive exhibit at the Centennial Exposition led to its demise. The outcome of the first year's work resulted in a valuable volume of papers on art educational subjects which had been read at weekly meetings. "The Antifix Papers" were printed for private circulation, copyrighted by the Massachusetts Art Teachers' Association, and comprised 239 pages. The following

¹ To be used in sets, each set shared by two classes.

chapters, suggestive of the contents of the complete volume, show the scope of study and research: Chapter II, fresco, encaustic, etc.; Chapters IV and V, harmony and contrast of color; Chapter XVI, technical terms; Chapter XVIII, botany as applied to industrial art; Chapter XXI, reproductive processes; Chapter XXIII, glass—cast, cut, and engraved; Chapters XXVIII and XXIX, historical schools of painting.

The Industrial Art Teachers' Association.—Following a successful meeting of industrial art teachers of the State in 1881, a new organization was formed at Boston in 1882. The general purposes were similar to those of the former association, and annual meetings were held, when papers were read and discussed. This association continued for many years, confined largely to the New England States, until it finally merged into the Eastern Art Teachers' Association.

National Education Association.—This largest educational body in the United States meets annually in various parts of the country for the purpose of discussing any and all questions pertaining to educational matters. The department of art education was first organized in 1884 under the leadership of Langdon S. Thompson, now of Jersey City, until finally there was organized one department of art and manual training. Many valuable papers have been contributed by leading art teachers and supervisors, and may be found in the annual reports.

The Connecticut Valley Art and Industrial Teachers' Association.—Another New England association was organized under the above name at Hartford, Conn., in October, 1888. It was founded by art teachers of central Connecticut, with the following purposes: To study the relationship of the various branches of the manual arts in education, beginning with the kindergarten; to offer opportunity for discussion and study of methods of art instruction; and to promote public interest in the subject. This association, like the Industrial Art Teachers' Association, continued to hold successful meetings until it merged into Eastern Art Teachers' Association in 1899.

The Western Drawing and Manual Training Association.—This association was a direct outcome of the enthusiasm and inspiration created at the World's Fair in Chicago in 1893. In August of that year the Western Drawing Teachers' Association was organized, 11 years later to be combined with the manual training teachers under the above head. The annual meetings, held in May, usually last for three days, with full programs and prominent speakers. A recent feature of the well-attended and spirited meetings has been the annual banquet, a dinner where not only friendships are renewed but where some of the more valuable papers are presented.

The present organization consists of a president, vice president, secretary, treasurer, auditor, council of members, program committee, editorial board of three members, and exhibit committee. Local committees are appointed just previous to the annual meeting.

Extensive exhibits and an annual illustrated report of the proceedings of the meetings are profitable features of the work of the organization.

Eastern Art and Manual Training Teachers' Association.—Through the invitation of Solon P. Davis,¹ president of the Connecticut Valley Art and Industrial Teachers' Association, a meeting of art supervisors from the Eastern States was held at Hartford in 1898, at which a new and far-reaching association was formed, the final organization taking place on February 10, 1899. The new Eastern Art Teachers' Association held its first meeting at Pratt Institute and the Institute of Arts and Sciences in Brooklyn on May 25–27 of the same year. Since then well-attended annual meetings have been held in the larger cities of the East. In 1906 a joint meeting with the Eastern Manual Training Teachers' Association in New York prompted the desire and pointed out the need of the amalgamation of the two bodies. This was not perfected, however, until a second joint convention at Pittsburgh in 1908.

In the year previous the Eastern and Western Associations held the first joint conference at Cleveland, Ohio, May 7. The big meeting was highly successful and contributed largely toward the successful combining of the two eastern associations the following year.

The Eastern Association reorganized at its successful meeting held in New York City during Easter week of the year 1913, following the general scheme of the western body and incorporating many features of their old constitution. A highly successful banquet, the floor of a huge armory covered with art, industrial, and commercial exhibits, and well-conducted meetings under the general direction of the president, Alvin E. Dodd, all contributed to an educational conference of no little importance.

The International Congress for Art, Education, Drawing, and Art Applied to Industry.—The International Congress for Art, Education, Drawing, and Art Applied to Industry held its fourth convention at Dresden from August 3 to 10, 1912. A brief history of this most important gathering of people interested in art education is worthy of note.

The First International Congress was held in Paris in the year of the 1900 exhibition, after a successful appeal made by the Association Amicale des Professeurs de Dessin de la ville de Paris et du Département de la Seine, to the Commissaire Général de l'Exposition Universelle de 1900. Official permission having been granted, the French professors of drawing thereupon formed themselves into a committee of organization. The first congress was instituted and held between August 29 and September 1, 1900, in the Hotel du Cercle de la Libraire, Boulevard St. Germaine, Paris, under the presidency of M. Paul Colin. Official delegates were sent from 15 different countries (including the United States, Japan, Mexico, and Cuba) and were 21 in number. The United States of America were represented by Miss Sartain,

¹ Principal, Henry Barnard School, Hartford, Conn.

Miss Wheeler, Providence, R. I., and Mr. Charles M. Carter, of Denver, Colo. Altogether there were 576 members of the first congress, and a permanent international committee was formed. In 1904 the Swiss committee approached the international committee with a view to holding the second congress in Berne, Switzerland. This was agreed upon, full arrangements were made, and it was ultimately held in Berne between the 1st and 6th of August, 1904. About 800 persons attended, representing 21 nations. The meetings took place in the Palais du Parlement and in the university. The United States of America were officially represented by Miss Wheeler; Dr. S. T. Dutton, of New York; Prof. A. V. Churchill, of Massachusetts; Mr. Charles M. Carter, of Denver; Mr. Frederick H. Daniels, of Newton, Mass.; Mr. William H. Baldwin, of Hyannis, Mass.; Mr. Solon P. Davis, of Hartford, Conn.; and others.¹

It was decided to hold the third congress at London in 1908. At the Berne congress a permanent International Federation was instituted with James Hall, North Scituate, Mass., Charles M. Carter, Denver, Colo., and William Woodward, New Orleans, La., as the American representatives.

This congress was a vast improvement over the other meetings, and under the organized direction of the International Federation covered an interesting and important field of discussion. The meetings were held from August 3 to 8, 1908, in the great hall of the University of London. The exhibition, covering 60,000 square feet of wall space, was opened on July 27 by Her Royal Highness the Princess Louise, Duchess of Argyle, and remained open until August 22. The membership was increased to 1,810, and 38 countries were represented.

The official representatives of the fourth congress were Mr. James Frederick Hopkins, of Boston, Mass.; Mr. John S. Ankeney, of Columbia, Miss.; and Mr. Ernest A. Batchelder, of Pasadena, Cal. Housed in three large buildings in an exhibition park, 24 different countries displayed 99 exhibits. The first day was made memorable by the presence of His Royal Highness Prince Johann Georg, who opened the largest congress yet, more than 2,200 members registering.

The fifth congress, with Royal Bailey Farnum, Albany, N. Y., chairman, Charles A. Bennett, Peoria, Ill., and Robert A. Harshe, Stamford, Cal., as the American representatives, will be held in Paris, 1916, in conjunction with a World's Exposition of Arts and Crafts.

The Council of Supervisors of the Manual Arts.—In May, 1901, a body of 10 supervisors of drawing and directors of art departments gathered at Hartford, Conn., for the purpose of forming an association which should stand for professional advancement. Members of this council pledged themselves to "study intensively different phases of the arts and to contribute the results of these studies to the council's Yearbooks."

¹ From first semiannual report of the British and American Mutual Correspondence Association.

The council, originally initiated by Dr. Haney, of New York, grew in numbers and power and each publication proved one of the most important additions to the literature of the manual arts. All articles were published in the Yearbook in advance of the meeting and no papers were read at that time. Notices of the meeting were sent out some weeks in advance, that those appointed to discuss papers might have opportunity to read them with care. The meetings then consisted of formal and general discussion. Membership was limited to 40 active and 100 associate, each active member contributing to the Yearbook. Seven volumes were published in all and were in such demand that when the council disbanded at Philadelphia in 1911 the first two volumes were out of print. Such bodies of interested workers banded together for intensive work should and do warrant continuance, and it is to be hoped that similar organizations may spring up later. The council of supervisors, however, served a timely need and will continue their good work through their lasting publications.

The American Federation of Arts.—The American Federation of Arts was organized in May, 1909, in Washington, D. C., for the following purpose:

"To increase the appreciation of art, cultivate taste, and improve civic conditions." It is "an association of institutions, organizations, and individuals, the head office at Washington, D. C., serving as a general bureau of information."¹ Means employed to fulfill its purposes include traveling exhibits, lectures with slides, a monthly magazine called *Art and Progress*, and the *American Art Annual*, the last published at the New York office. Among its standing committees is one for art in public schools. Annual meetings are held in May.

LOCAL ORGANIZATIONS.

The following local organizations have been listed mainly from the "*American Art Annual*," Vol. X, Florence N. Levy, editor, and all such are starred:

**Buffalo Manual Arts Teachers' Association.*—An organization of manual arts teachers of the department of public instruction, Buffalo, N. Y. Five meetings held during the school year.

Buffalo School Arts Association.—One of the best means to create interest in art activities is to bring to your teachers and their communities problems in which the art element is an important factor. Whether it be related to the home, to industry, or to civic improvement, it must in some way be of value to them in their everyday life.

It was with this thought that the Buffalo School Arts Association was organized in 1911 by C. Valentine Kirby, the membership being made up of teachers and others interested in furthering the interests of art education in the schools.

¹ *American Art Annual*, Vol. VIII, 1910-11, Florence N. Levy, editor.

The object of the association is to advance art education in the public schools of the city of Buffalo and their environments, by means of lectures, exhibitions, cooperation with the Fine Arts Academy and the Albright Art School in the training of the young to the appreciation of the fine and applied arts.

The Albright Art School offers through competitive examination five scholarships for talented pupils who graduate from the Buffalo public schools and desire to continue the study of fine and applied arts. The association is also a chapter of the American Federation of Arts. The dues are 50 cents a year, and the membership is 650.

During the coming year a series of illustrated lectures will be given in the various high schools. The subjects will be selected to meet the demand of the teachers of the city, who are anxious to secure a better understanding of the fine and industrial arts as applied to the public schools, also subjects related to the home and civic art. Visits will be made to the Albright Art Gallery, where various speakers will explain the exhibits and conduct the students through the galleries. A quarterly bulletin will be published for members and for use in the public schools, to keep the interest aroused and to bring to the members and students the progress that art is making in their city and in other cities.

Such an association we feel will create a new interest in art education among teachers, students, and the general public.¹

**Chicago School Arts Association*.—Bimonthly meetings.

**Chicago Public School Art Society*.—Organized in 1894; among other activities decorates the public schools. Traveling exhibits of paintings are maintained in cooperation with the Chicago Society of Artists and board of education; art libraries and photographs are loaned to schools.

**Columbus Public School Arts Club*.—Meetings held in Carnegie Library on the evening of the third Tuesday of each month, Columbus, Ohio.

**Connecticut Manual Arts Association*.—Organized in 1908; members meeting in April; joint meeting with school-teachers' association in October. Circulates a State traveling exhibit.

League for the Decoration of the Public Schools of the District of Columbia.—Organized in 1909 under auspices of the Washington Society of the Fine Arts. Its object is to improve the general aspect of the schools, and thus cultivate taste and upbuild appreciation for beauty manifested through art. It has completely decorated one building and parts of others.

**Evanston Public School Art Society*.—Organized in 1901 to further the interests of Evanston, Ill.

Hartford Supervisors of Art Instruction in Public Schools, Hartford, Conn.

**Houston Public School Art League, Houston, Tex.*—Organized in 1900; annual meeting in April; monthly meetings are held. Circulates photographs, casts, and original paintings in schools.

**Illinois Manual Arts Association*.—Organized in 1903; annual meeting in March.

**Iowa Manual Arts Association*.—Organized in 1909; annual meeting in March.

**Kansas Manual Arts Association*.—Annual meeting in October.

**Louisiana Art Teachers' Association*.—Organized in 1899; monthly meetings, November to June.

**Maine Teachers' Association*.—Drawing and manual training department. Annual meeting in October.

Massachusetts Normal Art School Alumni Association.—Organized in 1888; annual meeting in April. Meetings held in January and June, Boston, Mass.

**Western Massachusetts School Art League*.—Organized in 1910; three meetings yearly.

¹ Harry W. Jacobs, president and director of art education, Buffalo, N. Y.

**Michigan Industrial Science and Arts Association*.—Meetings November, February and May.

**Minneapolis Manual Arts Club*.—Bimonthly meetings.

**Missouri Association of Applied Arts and Sciences*.—Organized in 1908; annual meeting in November.

**Teachers Art Club of New Haven*.—Organized in 1905; annual meeting in May. Stated meetings September, November, January, and March.

New York State Art and Industrial Teachers' Association.—Meets annually with State association in November.

New York State Drawing Conferences.—Seventeen conference bodies representing counties of the State. Organized by State specialist, Royal B. Farnum, in 1911. Hold annual meetings for discussion of school drawing and manual arts.

School Art League of New York City.—The school arts league was organized early in the year 1911, and is a development of the art committee of the public educational association.

The purpose of the school art league is to foster the interests of art education in the public schools of the city of New York, and to secure to this end the cooperation of other societies. The league is designed as an organization for all interested in the creation of beautiful school surroundings, in the training of the young to the appreciation of fine and of applied art, and in the preservation and development of talent in gifted pupils.

The school art league offers, through competitive examinations, several industrial art scholarships for talented pupils who graduate from the art classes of the high schools and desire to continue the study of design in professional schools. Other cities offer many such scholarships, but these are the first open to the graduates of the New York City public schools.

A committee on schoolroom decoration is placing casts and pictures in the schools as these are secured by special contributions.

Lectures have been given in the Metropolitan Museum of Art for the members of the society, and for elementary and high-school pupils. Those attending represent all the high schools of the city, and some come many miles to be present.

In 1909 a bronze medal for fine craftsmanship was established. This medal was designed by Victor D. Brenner, and has since been awarded semiannually, at the close of each school term, for the best piece of work done by a member of the graduating class in each of the school workshops. These shops now number nearly 200.

Visits to art galleries are conducted for high-school pupils and teachers. Free admission has thus been secured by the league for pupils to visit the National Academy of Design, Architectural League, and special Metropolitan Museum exhibitions. At each the pupils are met, the exhibit is explained, and the students conducted by their teachers through the galleries.

The School Art League provides for the representation of affiliated societies among its officers. Any organization paying \$25 annually is entitled to be represented by a member elected or appointed to serve as a delegate member upon the board of managers. In no other way can a sum laid aside by any society for art education be made to secure so many advantages for so large a number.

Members of the School Art League receive cards for all its functions. During 1911-12 there were 22 lectures, 5 gallery visits, and 4 receptions. The annual meeting is in November; the executive committee meets monthly. There are five classes of members, all entitled to vote and hold office. The annual dues are: Active members, \$1; contributors, \$5; affiliated societies, \$25; patrons, \$50; donors, who give \$1,000.

**School Crafts Club, New York City*.—Organized in 1902; annual meeting in March; stated meetings in November, January, and May.

New York High School Drawing Teachers' Association.

**Ohio Art and Manual Training Teachers' Association.*—Annual meeting in November.

**Oklahoma Art League.*—Organized in 1910; circulates exhibits.

**Oklahoma Manual Arts Association.*—Organized in 1909; annual meeting during Christmas holidays.

**Manual Arts Association of Allegheny City—Pittsburgh.*—Organized in 1905; annual meeting in May. Monthly meetings.

**Teachers' Art Club, Pittsburgh.*—Organized in 1902; annual meeting in March. Stated monthly meetings.

**St. Paul Manual Arts Association.*—Monthly meetings first Wednesday.

**Southern Drawing Teachers' Association.*—Annual meeting in December.

Sunshine Club, Syracuse.—Membership unlimited if candidate signifies intention to assist in making the city beautiful. Practically all the school children belong and further the cause by means of letters on beautifying and improving city conditions written to the supervisor and forwarded to city officials. City improvement is part of the study in art education. Club started in 1910 by Supervisor Miss M. Matilda Mielt.

**Middle Tennessee Educational Association.*—Art and manual training section. Annual meeting in April.

**Texas Teachers' Association.*—Industrial art section. Meetings in December.

**Waco Art League.*—Organized in 1899; monthly meeting, with annual meeting in May. Circulates exhibitions.

**Public School Art Teachers' Association, Washington, D. C.*—Organized in 1910; annual meeting in April. Social meetings and talks by members.

**Wisconsin School Arts and Home Economics Association.*—Organized in 1909. Branch State teachers' association.

**Worcester Public School Art League.*—Organized in 1895; annual meeting, January. Stated monthly meetings. Work largely advisory. Money prizes offered for improvement in school yards. Places pictures, pottery casts, etc., in schools.

The value of such organizations can not be overestimated and their cooperation and assistance in aiding the work of the teacher and supervisor has lightened the burden materially.

The present condition of art in the public schools is indeed gratifying, and the prospect for the future is increasingly bright. Real work in the industrial arts, intensive courses in art as a cultural and liberalizing study, and the hearty support of not only local clubs and societies, but of industrial and business men, with generous assistance from educational boards, will soon tend to bring the work into a position of supreme importance, a condition of long standing in foreign countries and a situation demanding national support in the United States.

TABLE I.—Drawing in State school systems.

States.	Re-quired by law.	Year when first re-quired.	By what means encouraged.	Scholarships main-tained in—	Specialists or super-visors employed.	Salaries of specialists.	Drawing taught in reformatory institutions.
1	2	3	4	5	6	7	8
Alabama.....	No.....	.....	Optional study in the schools.....	Two normal univer-sities and all high schools.	Specialist approved by board of edu-cation.	\$100 to \$130 per month.	To be put in.
Arizona.....	No.....	.....	Included in course of study—State Normal School—Teachers' Training Department of State University.	Normal school and State University.	No.....	.....	.....
Arkansas.....	Yes.....	1880	Institute lectures, picture exhibits, art literature.....	.....	No.....	.....	Yes.
California.....	No.....	.....	.....	.....	No.....	.....	Yes.
Colorado.....	Yes.....	1898	Required in elementary schools, optional in second-ary schools.	.....	Supervisor (1).....	\$2,000	.....
Connecticut.....	Yes.....	.....	.....	.....	.....	.....	.....
Delaware.....	Yes.....	.....	.....	.....	.....	.....	.....
Dist. of Columbia.....	.....	.....	.....	.....	.....	.....	.....
Florida.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	No.....	.....	Included in course of study in many cities and towns and in all the higher institutions.	.....	No.....	.....	No.
Idaho.....	No.....	.....	.....	.....	Some towns have specialists.	.....	.....
Illinois.....	No.....	1906	Special teachers in schools.....	.....	No.....	.....	.....
Indiana.....	.....	.....	Cities of the first class contract with art association for instruction of the school children and teachers.	.....	Yes.....	\$80 to \$150 per month.	Yes.
Iowa.....	.....	.....	Official course of study and examination for pupils graduating from the graded schools.	.....	No.....	.....	To limited ex-tent.
Kansas.....	.....	1900	State normals and State University maintain courses in penmanship and drawing.	.....	No.....	.....	To limited ex-tent.
Kentucky.....	No.....	.....	Daily program in all the grades.....	.....	No.....	.....	No.
Louisiana.....	Yes.....	.....	.....	Each of the approved high schools.	Specialist, unless mem-bers of the faculty have had special training.	\$70 per month.	.....
Maine.....	No.....	.....	Part of accepted course in practically all schools.....	.....	No.....	.....	Yes.
Maryland.....	Yes.....	1901	Emphasized in the institute and enters into pro-motion of pupils. Scholarships, \$8,000.	.....	Supervisor sometimes employed by county.	\$1,000	.....
Massachusetts.....	Yes.....	1870	By Department of Art Education, through Mas-sachusetts Normal Art School, and indirectly through 9 other normal schools; bulletins, con-ferences, and field work.	Instruction free to res-idents of Massachu-setts.	Director, faculty of 20, and 12 normal school instructors.	Salaries vary.	Yes.

Danville.....	Central Normal College.....	2	T.	5	96	6	36	6	36	12	3	8	.....	5	144	5	36	2	24	A. B., B. S.	X	0
Fort Wayne.....	Fort Wayne School of Art.	2	T.	24	72	6	36	.....	.....	.....	6	12	.....	.....	.....	12	36	15	10	.....	X	X
Indianapolis.....	John Herron Art Institute.	.....	T. S.	19	35	3	35	.....	.....	.....	1	35	.....	.....	.....	1-3	35	.....	.....	0	X	X
Do.....	Teachers College of Indianapolis.	2	T. S.	5	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56	0	X	0
Marion.....	Marion Normal Institute..	2	T. S.	5	36	5	12	.....	.....	.....	5	24	.....	5	36	5	12	.....	.....	0	X	X
Terre Haute.....	{ Indiana State Normal } School.	2-4	T. S.	4	108	4	12	4	24	.....	.....	.....	.....	.....	{ 108- 144 }	.....	.....	.....	24	0	X	0
IOWA.																						
Bloomfield.....	Normal and Scientific Institute.	.....	T. S.	5	16	.....	.....	.....	.....	.....	5	12	.....	5	24	.....	.....	5	16	{ B. S., M. S., B. L., A. B., M. A. }	X	.....
Charles City.....	Charles City College.....	.....	.....	4	38	.....	.....	.....	.....	.....	.....	.....	.....	4	57	.....	.....	.....	.....	0	0	0
Des Moines.....	Des Moines College.....	2	T. S.	12	72	2	48	2	24	.....	2	60	.....	5	12	2	60	2	24	.....	X	0
Mount Vernon.....	Cornell College.....	2	T.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	0
KANSAS.																						
Baldwin.....	Baker University.....	2	T. S.	3	.....	3	.....	.....	.....	.....	1	.....	.....	.....	.....	2	.....	2	.....	0	0	0
Lindsborg.....	Bethany College.....	3, 4	T.	15	.....	.....	.....	.....	.....	.....	5	.....	.....	18	.....	.....	.....	.....	.....	B. P.	0	0
KENTUCKY.																						
Bowling Green.....	Western Kentucky State Normal School.	.....	5	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Richmond.....	Eastern Kentucky State Normal School.	2	T. S.	6	30	6	10	6	10	.....	6	10	.....	.....	.....	6	10	.....	.....	0	X	0
LOUISIANA.																						
Natchitoches.....	Louisiana State Normal School.	2	T.	4	12	4	12	4	12	.....	5	12	.....	5	72	8	24	5	36	0	X	0
New Orleans.....	H. Sophie Newcomb Memorial College.	4	T. S.	34-5	132	3	132	4	66	1	8	66	.....	2-5	33	1-48-132	2	33	.....	A. B.	X	0
MAINE.																						
Presque Isle.....	Aroostook State Normal School.	2	T.	3	50	.....	.....	.....	.....	.....	2	68	.....	7	13	3	26	2	12	.....	.....	.....
Springfield.....	Springfield Normal School.	2-4	T.	3	36	3	36	.....	.....	.....	.....	.....	.....	4	72	24	144	.....	12	.....	.....	.....
MARYLAND.																						
Baltimore.....	Maryland Institute.....	4	T. S.	42	.....	42	.....	21	.....	42	1	.....	.....	.....	80	2-21	.....	.....	.....	.....	0	X
Frostburg.....	State Normal School.....	2	T.	5	80	.....	.....	.....	.....	.....	.....	.....	.....	5	80	5	.....	.....	20	.....	.....	.....

1 Lectures.

TABLE II.—Courses for training teachers of art—Continued.

Location.	Institution.	Years in course.	Course designed for—		Drawing and painting.		Design.		Craft work.		Modeling.		Methods.		History of art.		History of education; pedagogy; psychology.		Anatomy; perspective; color theory; composition.		Practice teaching.		Degrees conferred.	Summer courses offered.	Night classes.	
			Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
MASSACHUSETTS.																										
Boston.....	Froebel School of Kindergarten Normal Classes.	...	0	1	10	1	10	...	...	1	10	...	30	...	...	1	20	1	10	...	...	0	0	0
Do.....	School of the Museum of Fine Arts.	...	...	36	...	20	...	5	...	...	...	...	...	1	...	...	...	4	...	...	...	...	0	0
Cambridge.....	Lesley Normal School.....	1	T.	1	30	1	30	1	15	1	15	...	...	...	...	2	30	...	...	...	12	...	0	0
Lanesville.....	Coggeshall Camp and Studio.	...	...	20	...	...	...	...	...	10	...	...	...	...	...	...	...	10	...	...	...	...	X	0
Salem.....	State Normal School.....	2	T.S.	2	12	2	10	2	20	2	6	...	...	1	15	...	...	2	20	2	12	...	0	0
Worcester.....	Art School of the Worcester Museum.	3	T.	9	...	12	...	9	...	3	...	...	...	3	...	...	...	2	...	3	...	...	...	X
MICHIGAN.																										
Charlevoix.....	Charlevoix County Normal School.	1	T.	1	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	0	0
Charlotte.....	Eaton County Normal School.	1	T.	5	38	...	...	...	...	...	...	...	...	...	...	5	38	...	...	10	20	...	0	0
Detroit.....	Thomas Normal Training School.	1	T.S.	5	40	1½	40	3	24	1	10	2	22	1	40	1	20	1½	16	1	24	0	0	0		
Flint.....	Genesee County Normal School.	...	T.	2	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	0	0
Grand Rapids.....	Grand Rapids Kindergarten Training School.	...	T.S.	5	6	5	2	...	...	5	2	...	...	...	...	2	30	4	30	...	48	...	X	0
Hillsdale.....	Hillsdale College.....	2	T.S.	2	38	1	...	1	...	1	...	1	...	1	...	4	...	2	...	1	...	...	0	0
Kalamazoo.....	Western State Normal School.	2	T.	16	66	16	12	16	6	...	...	16	6	16	18	16	36	...	12	16	36	...	X	0

Mount Pleasant....	Central State Normal School.	2	T. S.	5	36	5	24	5	12	.....	.....	5	12	5	48	.....	5	24	0	X	0
Muskegon.....	Muskegon County Normal Training Class.	.....	T.	1	36	.....	.....	.....	.....	.....	.....	.....	.....	5	40	.....	.....	.....	0	0	0
Olivet.....	Olivet College.....	2,4	T.	8	38	5	.....	2	.....	.....	.....	.....	.....	3	.....	5	2	.....	.....	0	0
Saginaw.....	County Normal School.....	.....	T.	1	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	.....	.....	.....	0	0	0
Standish.....	Arenac County Normal School.	1	T.	2	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	.....	5	10	.....	0	0
Ypsilanti.....	State Normal College.....	2	T. S.	4	48	4	12	4	24	4	12	1	36	4	48	4	424-36	{B. P. D., M. P. D., A. B. }	X	0	0
MINNESOTA.																					
Madison.....	Lutheran Normal School.....	.....	T.	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	36	5	3	36	0	0	0
Mankato.....	State Normal School.....	3	T. S.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	0
Minneapolis.....	Handicraft Guild School of Design, Handicraft and Normal Art.	2	T. S.	8½	60	6	10	2	30	1	60	1½	30	13	60	1½	5	30	.....	0	0
Do.....	Minneapolis School of Art.	3	T. S.	.....	36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	0	X
Do.....	University of Minnesota.....	.....	.....	6	40	.....	6	2	20	.....	.....	6	40	6	20	.....	.....	.....	0	0	0
Moorhead.....	State Normal School.....	1	T. S.	5	36	.....	.....	5	24	5	12	.....	24	5	24	.....	5	24	0	X	0
St. Paul.....	St. Paul Institute School of Art.	2	T. S.	18-21	28-32	6	32	15	8	2	32	2	8	.....	.....	2	3	12	.....	X	X
Winona.....	Winona State Normal School.	3	T. S.	5	24	5	36	5	12	5	12	5	12	5	60	.....	5	36	0	0	0
MISSOURI.																					
Cape Girardeau....	State Normal School.....	3	T.	5	72	5	36	5	12	5	12	5	12	3	108	5	5	36	.....	X	0
Kirkville.....	do.....	4	T. S.	5	36	15	24-48	5	36	5	12	5	36	5	72	15	5	36	A. B. or B. S.	X	0
Maryville.....	Northwest Normal School.	2	T. S.	5	48	5	48	5	48	5	48	5	24	5	48	5	5	48	0	X	0
Springfield.....	State Normal School.....	4	T. S.	5	96	5	36	5	24	5	60	5	24	5	72	5	5	24	B. P.	X	0
St. Louis.....	St. Louis School of Fine Arts.	.....	.....	18	.....	15	.....	.....	.....	1½	.....	.....	.....	.....	.....	5	.....	.....	0	0	0
Warrensburg	State Normal School	2	T. S.	10	72	10	12	10	12	.....	12	5	24	5	36	5	.....	36	B. P.	X	0
NEBRASKA.																					
Fremont.....	Fremont College.....	1	T. S.	6	20	.....	.....	.....	.....	.....	.....	.....	.....	3	20	3	5	36	.....	.....	.....
Kearney.....	State Normal School.....	2	T. S.	5	90	5	18	5	18	5	18	5	18	3-5	72	5	5	36	B. Ed.	X	0
Lincoln.....	School of Fine Arts.....	4	T. S.	6-9	160	3	.....	.....	.....	2,3	20	.....	.....	3	20	.....	.....	.....	A. B.	X	0
Peru.....	do.....	2	T. S.	5	36	5	18	5	18	3	36	5	18	10	36	.....	10	36	0	X	0
NEW HAMPSHIRE.																					
Keene.....	Keene Normal School.....	.....	.....	3	18	.....	.....	.....	.....	.....	.....	.....	.....	2-4	9-36	.....	.....	18	0	X	0
Plymouth.....	Plymouth Normal School.	3	T. S.	3-10	36	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	3	18	0	X	0
NEW JERSEY.																					
Elizabeth.....	Elizabeth Normal and Training School.	2	T.	1½	40	.....	.....	1½	40	.....	.....	.....	.....	7½	80	.....	10	20	0	0	0
Jersey City.....	Teachers' Training School.	.....	.....	1	40	.....	.....	.....	.....	.....	.....	.....	.....	3	20-30	.....	5	20	0	0	0
New Brunswick....	Rutgers College.....	.....	.....	.....	.....	.....	.....	.....	.....	2	38	.....	.....	21	.....	.....	.....	.....	0	0	0

Do.	4-9	6	3-4	4	20	2	30	2	30	3-5	20	30	B. S.	X	0
Teachers' College, Columbia University.	4	20				2	30	2	30	2	20			X	0
The Frick School.	16	4	4			2		1		3	3		B. P.	X	0
College of Fine Arts (Syracuse University).															0
NORTH CAROLINA.															
Fayetteville.	2	32	3	32		2	32			3	32	32	0	0	0
Franklinton.			1	32	2	4	32			2	32	32		0	0
Hickory.	20					5		5				5		0	0
NORTH DAKOTA.															
Ellendale.	5	36	6	36		5	36			10	36	18		X	0
Grand Forks.	5-14-28	5-10-20	2-4	20-34	5	5	19	217-34		4	68	5-10-20	B. Ed.	0	0
Mayville.	5	36								5	36	36	0	X	0
Valley City.	5	108	5	12	5	5	36	5	12	5	36	36	0	X	0
OHIO.															
Athens.	2	38	2	38	38	1	38	1	19			38	B. S.	X	0
Cincinnati.	5	80	24	40	24	2	80	2	40	1	40	40		0	X
Do.	4	160	8	160	8	20	40	1	80	1,2	40	40		X	X
Cleveland.	12	16	6		6	14	32	1			32	32		0	0
Do.	14	16	16			14	18	14	4		14	12	0	0	0
Columbus.	4		4		4	9		2		9		2	B. S.	0	0
Dayton.	2	40	2	10	2					7	40	20	0	0	0
Delaware.	3	35	3		3	3	35	3	35	3		1-3		0	0
Oberlin.	18	36	2	36	1	2	36	2	18	2	18	18	A. B.	X	0
Oxford.	2		6-9	18	9	3	36	4-9	18-36	3	72	2		X	0
Springfield.	4-6	40	1	0	0	1								X	0
Toledo.	1	76	14	76		1	76	1	20	4-20	20-76	20	0	0	0
OKLAHOMA.															
Edmond.	5-10	72	10	12		6-10	24	1	36	5	108	36	0	X	0
Weatherford.	5	36												X	0
OREGON.															
Monmouth.	14	40	5	40		1	40	1	40	5	40	20		X	0

TABLE II.—Courses for training teachers of art—Continued.

Location.	Institution.	Years in course	Course designed for—	Drawing and painting.		Design.		Craft work.		Modeling.		Methods.		History of art.		History of education; pedagogy; psychology.		Anatomy; perspective; color theory; composition.		Practice teaching.		Degrees conferred.	Summer courses offered.	Night classes.
				Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
PENNSYLVANIA.																								
California.	Southwestern State Normal School.	...	T.	4	40	...	...	...	...	...	...	...	...	1	80	8	40	...	...	22	20	...	0	0
Clarion.	State Normal School.	...	T.	4	27	...	...	...	...	...	...	4	14	...	...	4	164	...	...	5	41	...	0	0
Fort Washington.	Darby School of Painting.	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	X	...
Indiana.	State Normal School.	2	T.S.	5	80	3	50	4	46	4	8	4	28	4	15	...	...	3	5-50	8	54	...	0	0
Kutztown.	Keystone State Normal School.	...	...	3½	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mansfield.	State Normal School.	2	T.S.	10	52	10	28	5	40	...	...	4	40	2	40	6	80	5	20	5	40	...	0	0
Millersville.	do.	...	T.	3½	13	3½	12	3½	5	...	...	3½	3	3½	3	2½	9	3½	8	3½	12	B. Pd., M. Pd.	0	0
Muncy.	Lycoming County Normal.	...	T.	2½	9	...	...	...	...	...	...	...	...	...	...	...	...	2½	9	...	...	X	0	0
Philadelphia.	Pennsylvania Academy of the Fine Arts.	...	...	54	...	...	...	...	...	64	...	...	...	...	...	...	...	...	...	...	...	...	0	X
Do.	Freobelian Training School for Women.	2	T.S.	2	42	½	10	...	...	1	10	10	60	1	30	7	64	2	20	½	15	...	0	X
Do.	Pennsylvania Museum and School of Industrial Art.	4	T.S.	30	...	30	...	30	...	30	...	3-6	...	3-6	...	...	...	3-6	...	3-6	...	0	0	X
Shippensburg.	Cumberland Valley State Normal School.	1	T.S.	3	40	...	...	...	...	...	...	...	...	...	...	3	40	...	...	5	40	0	0	0
RHODE ISLAND.																								
Providence.	Rhode Island Normal School.	2½	T.	...	...	2	60	2	20	...	...	2	20	...	...	3, 4	20-40	...	...	...	...	0	0	0
Do.	Rhode Island School of Design.	4	T.	6-22	30	2-10	30	4	30	4	30	2	30	2	30	5	30	4	30	5	30	...	X	X

SOUTH CAROLINA.		4	T.S.	7½	12	7½	12	7½	48	7½	12	7½	32	12-60	7½	36			B.S.	X	0
Rock Hill.....																					
SOUTH DAKOTA.																					
Aberdeen.....	Northern Normal and Industrial School.	2	T.	5	36	3	36	2	18	3	18	5	7	36	3	18	5	36		X	0
Redfield.....	Redfield College.....			5	36								4	18			5	36	A. B.	X	0
Sioux Falls.....	Lutheran Normal School.....		T.	5	18												1	6	0	X	0
Springfield.....	State Normal School.....	4	T.	10	36			5	36		36				5	36	5	36	0	0	0
Vermilion.....	University of South Dakota.	2	T.	2	160	2	80												0	0	0
Yankton.....	Yankton College.....	3	T.S.	6	36	3	36	3	36						1	36				X	0
TENNESSEE.																					
Jefferson City.....	Carson and Newman College.	4	T.	15	40																
Johnson City.....	East Tennessee State Normal School.	2	T.	2		2		2			12									X	
TEXAS.																					
Canyon.....	West Texas State Normal College.	3	T.S.	5	22	5	20	5	5	0	0	1	5	12-24	5	7-12	2½	24	0	X	0
Fort Worth.....	Texas Christian University.	3	T.S.	9	36	2	36	9	36				2		2				X	0	
Huntsville.....	Sam Houston State Normal Institute.	3	T.S.	2	24								5	12			2	12	0	X	0
UTAH.																					
Salt Lake City.....	University of Utah.....	2	T.	20	36	4	36						6	36			4	36		X	
VERMONT.																					
Castleton.....	State Normal School.....	2	T.	3	38	1	20				38	10	38	2	30	8,9	4,5		X	0	
Johnson.....	do.....		T.	3,4	58	3,4	58	3,4	58	1	10	4,5	7½	19					0	X	0
VIRGINIA.																					
Fredericksburg.....	State Normal and Industrial School for Women.	6	T.S.	2	216	2	72	12	144	4	36	3	3		2	72	5	36	0	0	0
Harrisonburg.....	do.....	2	T.S.	6	36	4	24	9	36			2	11	36	2	24	5	36	0	X	0
Petersburg.....	Virginia Normal and Industrial Institute.			5	68								5	68							
WASHINGTON.																					
Bellingham.....	State Normal School.....	2	T.S.	4	30-40	4	10	4-6	10	4-6	10	4	5	60	4-6	10-20	5	10-20	0	X	0
Ellensburg.....	do.....	2,3	T.S.	3	18	2	18	1,2	18	1,2	18	2					3,5	9,18	0	X	0
Seattle.....	Seattle Art School.....	2	T.S.	30	40												3				
Tacoma.....	University of Puget Sound.	2	T.S.	1	36	2	10	2	10	1	5	1	4	36	1	36	5	36		X	0

TABLE II.—Courses for training teachers of art—Continued.

Location.	Institution.	Years in course.	Course designed for—		Drawing and painting.		Design.		Craft work.		Modeling.		Methods.		History of art.		History of education; pedagogy; psychology.		Anatomy; perspective; color theory; composition.		Practice teaching.		Degrees conferred.	Summer courses offered.	Night classes.	
			Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.	Hours per week.	Weeks in course.				
1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
WEST VIRGINIA.																										
Bethany.....	Bethany College.....	3	T.	8	32				2								8							0	0	
Harpers Ferry.....	Storer College.....		T.	1													4	32						0	0	
Huntington.....	Marshall College (State Normal School).....	3	T.S.	5	108	5	108	5	18	5			5	18	5	18	5	72	5	14	5	36		X	0	
Shepherdstown.....	Shepherd College, State Normal School.....	2	T.	5	14	5	14				5	14							5				0	X	0	
West Liberty.....	West Liberty State Normal School.....	1	T.	5					5				5				5	48						0	0	
WISCONSIN.																										
Berlin.....	Green Lake County Training School.....			5	20	5	10										5	10			5	40		X	0	
Columbus.....	Columbia County Training School.....			1	10																					
La Crosse.....	State Normal School.....	2	T.S.	5	80																		X	0	0	
Merrill.....	Lincoln County Training School for Teachers.....	4	T.	10	20																		0	0	0	
Milwaukee.....	School of Fine and Applied Arts, State Normal Sch.....	2, 3	T.S.	12	120	6	120	3-12	20-80	6	20	3	80	1	54	1-5	20	14-64	12-40	9	30		X	X	0	
New London.....	Waupaca County Normal School.....	130	T.	5	20	5	10																X	0	0	
Phillips.....	Price County Training School for Teachers.....			5	10																					
Platteville.....	State Normal School.....			5	10	5	10		5	20			5								5	20		X	0	

TABLE III.—Drawing in city schools (elementary grades).

NOTE.—X indicates "Yes," and 0 "No." T. is abbreviation for Teacher, and S. for Supervisor, in column 7.

Location.	Minutes per week devoted to drawing.	Director or supervisor	Does director teach or	Value of equipment in handwork	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or handwork in the following are taught—													
									Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
ALABAMA.																														
Anniston.....	75-150	0						X							1-8	1-8	0	4-6	1-8	0	0	0	0	0	K-2	0	0	0	0	
Birmingham.....	60	X	\$300-1,100	X	\$2,750		X	X	6,7	5-7	1-7	1-7	1-7		4-7	1-7	2-7	1-7	4,5		2-4	1			2-4	1			5,7	
Gadsden.....	60	X	585	0			0	X	3-7	5-7	1-3	2-7	1-7		3-7	1-7	1-7	1,2											5-7	
Mobile.....	60	X						X		5-8		7-8	4-8		5-8	1-8	5-8	1-8	5,6		1-4	1,2			1-4	1			5-8	
Selma.....	60	X	1,350	0	750																								5-8	
ARIZONA.																														
Phoenix.....	90-100	X	1,100			\$400	X	X	2-6	5-8	1,2	3-8	1-8		3-8	1-8	1-8	1-8	3,4		1-8	K-2			1-8				5-8	
ARKANSAS.																														
Fort Smith.....	75	X		X		2,000	X	X	1-7	1-8	1-8	1-8	1-8		5-8	1-8	1-8	1-8	0	0	1-8	0	0	0	1-8	0	0	0	7,8	
Hot Springs.....	100	X		X					4-8	2-8	1-8	1-8	1-8		4-8	1-8	2-8	7,8	1-8		2-8				2-8					
CALIFORNIA.																														
Alameda.....	60	X		X	100	450	X	X	1-4	1-8	1-3	1-8	1-8	8	1-8	1-8	1-8	1-8	1-4	1,2	1-4	1	8		1-4	1	8		5-8	
Bakersfield.....	60	X		X			X	X	1-8	2-8	1-8	1-8	1-8	6-8	5-8	1-8	1-8	1-8			1-8	1-8			1-8	1,2				
Fresno.....	60	X	1,350	X	900	2,000	X	X	1-8	1-8		7,8	1-8	7,8		1-8	7,8	1-8	1-8	4,5	1-8	1-8			1-8	1,2				
Long Beach.....	75	X	1,200	X	50	1,000	X	X	1-8	1-8	1-8	1-8	1-8	6-8	6-8	1-8	1-8	1-8	1-8	1-4	3,4	1-8			1-8	1,2			5-8	
Los Angeles.....	90	X	2,700	4	15,000	2,500	X	X	1-8	1-8	1-8	1-8	1-8	7,8	6-8	1-8	1-8	1-8	1,2	1,2	1-4	1-8	5-8	5-8	1-4	1-8	5-8	5-8	4-8	
Oakland.....	60-90	X	1,500	X	44,000	1,200	X	X	1-8	1-8	1-8	1-8	1-8	6-8	6-8	1-8	1-8	1-8	1-8	1,2	1-4	1-8	1-8	5-8	1-4	1-8	5-8	5-8	4-8	
Pasadena.....	90	X	1,500	X			X	X	1-8	1-8	1-8	1-8	1-8	0	1-8	1-8	1-8	1-8	1-8	1,2	1-4	1-8	1-8	5-8	1-4	1-8	5-8	5-8	4-8	
Porterville.....	120	X	1,500	0		500			2-8	3-8	1-8	1-8	1-8		1-8	1-8	1-8	1-8	2,4	2,4	3,4	1-8	1-8	5-8	1-4	1-8	5-8	5-8	4-8	
Redlands.....	60-100	X	1,200	0					1-8	1-8	1-8	1-8	1-8		1-8	1-8	1-8	1-8	1-4	1,2	1-4	1-8	1-8	5-8	1-4	1-8	5-8	5-8	4-8	

TABLE III.—Drawing in city schools (elementary grades)—Continued.

City	Salary of director or supervisor	Assistant teachers employed	Salary of assistant teacher, etc.	Does director teach or	Handw	Value of equipment in handwork	Value of equipment in drawing	Cost per year of material	Grades in which design or handwork in the following are taught—																			
									Design	Handwork	Reeds and raffia	Yarns	Paper cardboard and d	Clay	Metal	Leather	Wood											
Alton	\$1,360	1	\$1,100	B.	X			\$250	X																			
Aurora (W. B.)	850	0			X			250	X																			
Belleville	1,150	0			X				X																			
Belleville	810	0			X				X																			
Calumet	540	0			X				X																			
Chicago	855	1	875	T. B.	X			350	X																			
Chicago	2,200	0		T. B.	X			18,000	X																			
Chicago Hts.	800	0		T. B.	X			300	X																			
Cicero	60	0		T. B.	X			270	X																			
Danville	1,000	0		B.	X			250	X																			
Decatur	825	0		T. B.	X			350	X																			
East Aurora	950	0		T. B.	X			300	X																			
East St. Louis	160	0		B.	X			300	X																			
Elgin	75	X		T. B.	X			450	X																			
Evanston	1,100	0		T. B.	X			450	X																			
District 8	40-50	0		T. B.	X			200	X																			
District 75	90-125	X		T. B.	X				X																			
Freeport	90	0		T. B.	X				X																			
Galesburg	900	0		T. B.	X			75	X																			
Jacksonville	630	0		T. B.	X			100	X																			
Kankakee	633	0		T. B.	X			75	X																			
Le Salle	750	0		T. B.	X			25	X																			
Lincoln	500	0		T. B.	X			350	X																			
Matteson	100	0		T. B.	X				X																			
Pekin	75-150	0		T. B.	X			800	X																			

Quincy.....	75	X	1,100	0	T.S.	X	250	.....	5-8	5-8	1-8	1-8	1-3	1-3	1-3	1-6	1-4	.....	7,8
Rockford.....	60	X	1,600	1	T.S.	X	.....	.....	1-8	3-8	1-8	1-8	1-3	1-3	4	1-8	1	.....	8
Springfield.....	60-90	X	.....	X	.....	.....	300	.....	1-8	1-8	1-8	1-8	1-8	4,5	2,3	1-3	5,6	.....	5-8
INDIANA.																			
East Chicago.....	60	X	900	0	T.	X	40	50	1-8	1-8	1-8	1-8	1-8	3-6	1-4	1-5	1-4	.....	6-8
Evansville.....	100	X	1,400	0	T.S.	X	100	200	1-8	1-8	1-8	1-8	1-8	.....	.....	.....	.....	.....	.....
Fort Wayne.....	75-90	X	1,600	0	S.	X	.....	.....	1-8	3-8	1-8	1-8	7,8	.....	.....	K-2	K-2	.....	.....
Hammond.....	60	X	1,100	0	T.	X	500	100	1-8	6-8	1-8	1-8	1-8	4,5	1-4	1-5	1-5	.....	6-8
Huntington.....	75	X	810	X	S.	X	75	200	1-8	.....	1-8	1-8	1-8	4,5	1-3	1-5	1-5	.....	6-8
Indianapolis.....	90	X	2,500	X	T.S.	X	.....	2,000	1-8	7,8	1-8	1-8	1-8	6-8	1-8	1-8	1	7,8	4-8
Jeffersonville.....	60	X	810	0	T.S.	X	.....	100	1-8	1-8	1-8	1-8	1-8	1	.....	1-8	.....	.....	.....
Kokomo.....	90	X	1,000	0	S.	X	200	300	1-8	6-8	1-8	1-8	1-8	1-8	2-5	1-8	1-3	.....	5,6
Lafayette.....	60	X	950	0	T.S.	X	1,200	800	1-8	5-8	1-8	1-8	1-8	1-8	4-8	1-8	1-3	.....	7,8
Laporte.....	60	X	1,500	0	S.	X	50	300	.....	7,8	1-8	1-8	1-8	1-8	1-4	1-4	1-5	.....	6-8
Logansport.....	60	X	1,900	0	S.	X	.....	.....	1-8	0	1-8	1-8	1-8	1-4	1-4	1-3	0	0	0
Marion.....	60	X	1,200	X	S.	X	1,000	500	1-8	3-8	1-8	1-8	1-8	1-5	1-5	1-6	1-8	7,8	7,8
Michigan City.....	90	X	1,000	0	T.S.	X	150	200	1-8	8	1-8	1-8	1-8	1-7	5,6	1-3	.....	.....	.....
Mishawaka.....	120-180	X	765	0	T.S.	X	85	125	1-8	.....	1-8	1-8	1-8	1-7	2,3	1,2	1,2	6,7	7
Muncie.....	100-150	X	1,000	X	S.	X	.....	300	1-8	8	1-8	1-8	1-8	1-7	1,2	4,5	1-4	.....	5-8
Peru.....	200	X	720	0	S.	X	.....	20	1-8	.....	1-8	1-8	1-8	.....	.....	.....	.....	.....	.....
Richmond.....	60-90	X	1,100	2	T.S.	X	2,000	2,000	1-8	7,8	1-8	1-8	1-8	2,3	2,3	4-6	1,2	0	0
South Bend.....	100	X	1,300	X	T.	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	4-6	.....	.....	7
Terre Haute.....	.....	X	1,240	X	T.S.	X	4,000	100	1-8	6-8	1-8	1-8	1-8	.....	.....	1-4	1	.....	6-8
IOWA.																			
Boone.....	145	X	675	0	T.	X	.....	200	1-8	.....	1-8	1-8	1-8	3-8	1,2	1,2	1	.....	6-8
Burlington.....	75	X	900	0	T.S.	X	650	200	1-8	4	1-8	1-8	1-8	3-5	3-5	1-5	0	0	0
Cedar Rapids.....	90-125	X	1,400	0	T.S.	X	.....	400	1-8	1-5	1-8	1-8	1-8	.....	.....	1-8	1	.....	.....
Clinton.....	60-90	X	1,000	0	T.S.	X	.....	.....	1-8	.....	1-8	1-8	1-8	.....	.....	.....	.....	.....	.....
Council Bluffs.....	.....	X	900	0	T.S.	X	.....	100	1-8	5-8	1-8	1-8	1-8	1-3	1-3	1-8	.....	6-8	6-8
Davenport.....	100-120	X	1,200	.....	S.	X	.....	.....	1-8	6,8	1-8	1-8	1-8	4,5	.....	2-4	1-3	.....	6-8
Dubuque.....	60-90	X	950	0	T.S.	X	.....	200	1-8	7,8	1-8	1-8	1-8	5	1,2	4-8	1-6	.....	7,8
Gary.....	225	X	.....	.....	T.S.	X	2,000	500	1-8	7,8	1-8	1-8	1-8	3-5	1-3	1-5	1-6	.....	5,8
Iowa City.....	30	X	800	.....	T.S.	X	0	100	1-8	.....	1-8	1-8	1-8	4,5	1-3	5	1	.....	6-8
Keokuk.....	75-100	X	630	0	T.S.	X	100	.....	1-8	.....	1-8	1-8	1-8	6	0	1-5	1-5	0	0
Marshalltown.....	.....	X	630	0	T.S.	X	100	50	1-8	.....	1-8	1-8	1-8	3,4	1,2	1-4	1-4	0	6,7
Mason City.....	75	X	698	0	T.S.	X	.....	20	1-8	.....	1-8	1-8	1-8	1-4	1-4	1-4	1-4	0	0
Muscatine.....	75	X	800	0	S.	X	.....	200	1-8	8	1-8	1-8	1-8	1-8	.....	1-3	.....	.....	5-8
Ottumwa.....	60-100	X	1,000	0	T.S.	X	.....	.....	1-8	.....	1-8	1-8	1-8	3-5	1-4	1-5	0	0	0
Sioux City.....	150	X	1,300	X	S.	X	.....	.....	1-8	7,8	1-8	1-8	1-8	3	3	1-3	1-3	0	0
Waterloo.....	30-60	X	765	0	T.S.	X	.....	.....	1-8	.....	1-8	1-8	1-8	1-4	.....	1-4	.....	.....	.....
Waterloo (West).....	60	0	.....	0	T.S.	X	.....	.....	1-8	.....	1-8	1-8	1-8	.....	.....	1-4	.....	.....	.....

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or handwork in the following are taught—									
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
KANSAS.																														
Atchison.....	60-120	0					X				0	X			7,8	4-8	5-8		8	3-8	7,8	1			1				6-8	
Fort Scott.....	80	X	\$810	0		T. S.	0		0		0	X	0-8	7,8	1-3	1-8	4-8	0	5-8	1-8	1-8									
Kansas City.....		X	1,188	0		T. S.	0				X	X	1-8	7,8	1-4	1-8	1-8		1-8	1-8	1-8									
Lawrence.....	60	X	540	0		T. S.	X	\$3,000			X	X	4-6	7,8	1-8	1-8	1-8	7,8	1-8	1-8	5-8	1-8	4,5	1-3	1-8	1-4			5-8	
Leavenworth.....	100	X	765	0		T. S.	X	100	\$200	400	X	X	1-8	5-8	1-4	1-8	1-8	5-8	5-8	1-8	1-8	1-5	4							
Topeka.....	60	X	1,000	0		T. S.	X					X																		
KENTUCKY.																														
Frankfort.....	40	X	473	0		T.	X			500	0	X	1-8	1-8	1-8	1-8	1-8	6-8	4-8	1-8	5-8	7-8			1-8					
Henderson.....	40-60	X	750	0		T. S.	X	50	150	200	X	X	2-8	5-8	1-8	1-8	1-8		5-8	1-8	1-8									
Louisville.....	90	X	1,500	0		T. S.	X	3,000		3,102	X	X	5-8	5-8	1-4	5-8	1-8	5-8	5-8	1-8	1-8	1-8	2-5	1-4	1-8	1-4	0	0	4-8	
Newport.....	50	X	900	1		T. S.	X				0	X		1-8	1-8	1-8	1-8	7,8	5-8	1-8	1-8	1-8			1-8					
Owensboro.....	40	0		0			X			50	X	X				1-8	1-8			1-8					1,2	1				
Paducah.....	200	X	800			T. S.	X				0	X																		
LOUISIANA.																														
New Orleans.....	60	X	1,250	X	600-800	S.	X	0	0	2,000	X	X	1-8	2-8	1-8	1-8	1-8	5-8	6-8	1-8	1-8	1-8	5-8	2-4	1-8	1-8				
MAINE.																														
Augusta.....	90	X	650	0		S.	X	600	2,000	450	X	X	4-9	1-9	1-9	1-9	1-9	1-9	5-9	1-9	1-9	1-9	1-4	1-4	1-4	4-9	4-9	5-9		
Lewiston.....	60	X	1,000	0		T. S.	X	60		170	X	X	6-9	6-9		3-9	1-9		6-9	1-9	3-9	1-9			1-9					
MARYLAND.																														
Baltimore.....	60	X	1,200	8	800	T. S.	X				X	X	7,8	7,8	1-4	1-8	1-8		7,8	1-8	1-8	1-8			1-8	1-3				
Cumberland.....	80	X	1,300	0		T. S.	X			1,000	X	X	1-4	3,4	1-4	1-4	1-4			1-4	1-4	1-4	3,4	3,4	1-4					
Hagerstown.....	120	0								525	X	X				5-8	1-8	7,8		7,8	7,8	7,8			1				7,8	

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—									Grades in which design or hand-work in the following are taught—							
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.
1	2												14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
IDAHO.													1-4	5-8	1-4	1-8	1-8	7, 8	5-8	1-8	1-8	1-4	3, 4	2, 3	1-4				
Boise.....	90	X	\$1,350	1	\$1,100	S.	X			\$250	X	X	1-8	5-8	1-4	1-8	1-8	7, 8	5-8	1-8	1-8	1-4	3, 4	2, 3	1-4				
ILLINOIS.													1-8	1-8	1-8	1-8	1-8	6-8	5-8	1-8	1-8	1-8	4	1-3	1-8	1-2			6-8
Alton.....	40-90	X	850	0		S.	X			250	X	X	1-8	1-8	1-8	1-8	1-8	6-8	5-8	1-8	1-8	1-8	1-4	1-3	1-8	1-8			6-8
Aurora (W. S.).....	80	X	1,150	0		T. S.	X				X	X	1-8	1-8	1-8	1-8	1-8	0	3-8	1-8	1-8	1-8	4	1-3	1, 2	1, 2			6-8
Belleville.....	90	X	810	0		S.	X				X	X	1-8	1-8	1-8	1-8	1-8	6-8	6-8	1-8	1-8	1-8	0	0	1-8	0		0	8
Cairo.....	120	X	540	0		S.	X				X	X	7, 8	1-8	4-8	1-8	1-8	6-8	6-8	1-8	1-8	1-3	3	2	1	3		0	5-8
Champaign.....	100	X	855	1	675	T. S.	X			350	X	X	1-3	1-8	1-8	1-8	1-8	...	5-8	1-8	1-8	1-8	1-7	1-4	1-8	1-2	7, 8	6-8	4-8
Chicago.....	50-80	10	2,200	0		T. S.	X			18,000	X	X	1-8	6-8	1-8	1-8	1-8	...	6-8	1-8	1-8	1-8	1-3	1, 2	3, 4	6-8			5-8
Chicago Hts.....	75	X	800	0		T. S.	X			300	X	X	5-8	7, 8	1-8	1-8	3-8	6-8	6-8	1-8	1-8	1-8	1-3	1, 2	3, 4	6-8			5-8
Cleora.....	60	X					X					X	2-8	1-8	1-8	1-8	1-8	4-8	4-8	2-8	2-8	1-8	4-6	1-4	1-4	1-5	0	0	6-8
Danville.....	60	X	1,000	0		S.	X			270	X	X	1-8	1-8	1-4	4-8	1-8	7, 8	5-8	1-8	1-8	1-8	3, 4	3	1-4	1-5	...	...	5-8
Decatur.....	60-90	X	925	0		T. S.	X			350	X	X	1-8	1-8	1-8	1-8	1-8	6-8	4-8	1-8	1-8	1-5	1-3	1-5	1-8	1-7	7	7, 8	6-8
East Aurora.....	100	X	950	0		T. S.	X			300	X	X	4-8	3-8	1-8	1-8	1-8	6-8	4-8	1-8	1-8	1-8	1, 2, 5	1, 2	1-4, 6	2-4	0	0	8
East St. Louis.....	150	X		X		S.	X				X	X	...	...	1-8	4-8	1-8	6-8	7, 8	1-8	1-8	1-8	3-5	2, 3	1-5	0	0	0	6-8
Elgin.....	75	X	1,100	0		T. S.	X			450	X	X	4-8	1-8	6-8	1-8	1-8	3-6	5-8	1-8	1-8	1-8	3-5	2, 3	1-5	0	0	0	6-8
Evanston.....							X					X	1-8	...	1-8	1-8	1-8	...	...	1-8	5-8	1-4	1-4	1-4	1-4	1-3	8	8	5-8
District 6.....	40-50	0					X			200	X	X	1-8	...	1-3	1-8	1-8	...	7, 8	1-8	1-8	5-8	1-4	1-4	1-4	1-3	8	8	5-8
District 75.....	90-125	X	1,250	0		T. S.	X				X	X	1-8	6-8	1-8	1-8	1-8	...	4-8	1-8	1-8	1-8	1-3	1, 2	1, 2	1, 2	...	...	...
Freeport.....	90	X	900	0		T. S.	X				X	X	1-6	1-8	1-8	1-8	1-8	...	4-8	1-8	1-8	1-8	1-3	1, 2	1, 2	1, 2	...	...	...
Galesburg.....	90	X	630	0		T. S.	X			75	X	X	5-8	1-8	1-4	3-8	1-8	7, 8	3-8	1-8	1-8	1-8	3-5	1, 2	1, 2	1, 2	...	...	7, 8
Jacksonville.....	75	X	900	0		T. S.	X			1,000	X	X	1-8	6-8	1-8	1-8	1-8	...	4-8	1-8	1-8	1-8	4-8	2, 3	1-8	1-8	...	...	5-7
Kankakee.....	90	X	653	0		T. S.	X			75	X	X	5-8	7, 8	1-4	6-8	7, 8	...	7, 8	5, 6	6-8	7, 8	1-8	1	1	1	0	6-8	...
La Salle.....	40-50	X	750	0		T. S.	X			25	X	X	7, 8	5-8	4-8	4-8	2-8	0	5-8	1-8	1-8	1-5	4, 5	1, 2	6-8	1, 2	0	0	7, 8
Lincoln.....	100	X	500	0		T. S.	X			350	X	X	...	...	4-8	1-8	1-8	...	5-8	1-8	1-8	1-5	4, 5	1, 3	1-5	...	...	...	6-8
Mattoon.....	75-150	X					X				X	X	1-8	5-8	1-8	1-8	1-8	...	...	1-8	1-8	1-5	4, 5	1, 3	1, 2	...	...	...	6-8
Peoria.....	75	X	1,450	2	750	T. S.	X			800	X	X	1-8	5-8	1-8	1-8	1-8	6-8	1-8	1-8	1-8	1-5	4, 5	1, 3	1, 5	1-4	...	...	6-8

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or hand-work in the following are taught—									
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
MICHIGAN.																														
Adrian.....	120	X	\$1,100	0	\$400	T.S.	X	\$75	\$200	.....	X	X	{3, 7, 8}	5-8	1-8	1-8	1-8	.....	7, 8	1-8	1-8	1-4	{1, 3, 4}	1-3	1-4	1	.....	.....	.....
Alpena.....	120	X	720	0	.....	T.S.	X	100	.....	.....	X	X	3-8	6-8	1-6	3-8	1-8	7, 8	4-8	1-8	1-3	.....	.....	.....	.....	.....	.....	.....	.....
Ann Arbor.....	100	X	950	X	300	T.S.	0	3,000	1,800	\$353	X	X	.....	.....	.....	3-8	3-9	.....	{6, 7, 9}	1-9	1-8	1-8	3-5	2-4	1-3	2	.....	.....	.....
Bay City.....	125	X	1,000	X	.....	T.S.	X	1,000	500	.....	0	X	8	.....	8	6-8	1	.....	7, 8	8	5-7	.....	.....	2	2	8	.....	8	5-8
Calumet.....	100-150	X	1,400	X	800	S.	0	.....	150	800	.....	X	1-8	1-8	1-8	1-8	1-8	.....	4-8	1-8	1-8	.....	.....	.....	1-8	.....	.....	.....	.....
Detroit.....	60	X	2,000	X	{1, 200-1, 300}	T.S.	0	.....	.....	5,000	X	X	0	.....	.....	3-8	1-8	.....	7, 8	1-8	1-8	.....	.....	.....	.....	.....	.....	.....	.....
Escanaba.....	120	X	800	0	.....	T.S.	X	50	250	525	X	X	5-8	.....	1-4	4-8	5-8	.....	8	1-8	6-8	6-8	6-8	6-8	6-8	.....	.....	.....	8
Flint.....	90	X	1,000	0	.....	T.	X	.....	.....	700	X	X	.....	7-8	5-8	4-8	1-8	5-8	5-8	8	3-8	1-4	3, 4	.....	1, 2	.....	.....	8	.....
Grand Rapids.....	80-150	X	1,200	0	.....	S.	X	200	200	2,000	X	X	4-7	5-8	1-8	4-8	1-8	8	4-8	1-8	1-8	1-8	2-5	1-5	1-8	1-8	5-8	7, 8	5-8
Holland.....	120	X	650	0	.....	T.S.	X	100	300	500	X	X	3-8	4-8	1-3	3-8	1-8	.....	4-8	1-8	3-8	1-4	3, 4	1, 2	3, 4	1-4	0	0	0
Ironwood.....	100	X	900	0	.....	S.	.....	30,000	500	750	X	X	4-8	3-8	2-8	1-8	3-8	7, 8	6-8	1-8	4-8	5-8	3-5	0	5, 6	1, 2	0	0	6-8
Ishpeming.....	90-100	X	1,000	0	.....	T.	X	500	1,000	.....	X	0	1-4	1-8	1-4	1-8	1-8	6-8	4-8	1-8	1-8	1-8	3-5	2, 3	1-8	.....	.....	.....	.....
Kalamazoo.....	90-150	X	900	X	{540-750}	T.S.	X	.....	.....	.....	X	X	1-8	1-8	1-8	1-4	1-8	4	4-8	1-8	3-8	1-5	2-4	2-4	1-4	1-5	.....	.....	.....
Lansing.....	125	X	800	.....	.....	T.	0	.....	.....	100	X	X	1-8	.....	.....	.....	.....	.....	7, 8	1-8	4-8	.....	0	0	5, 6	0	0	0	7, 8
Marquette.....	60	X	750	0	.....	T.S.	X	200	10	200	X	X	1-8	3-8	1-8	1-8	1-8	7, 8	4-8	1-8	1-8	1-8	4-8	1-3	1, 2	.....	.....	.....	7, 8
Menominee.....	100	X	900	0	.....	T.S.	X	400	400	543	X	X	1-8	5-8	1-8	1-8	1-8	6-8	5-8	1-8	1-8	1-8	4-6	.....	1-3	.....	.....	.....	6-8
Muskegon.....	80-180	X	1,000	0	.....	T.S.	X	.....	.....	.....	X	X	4-7	1-7	1-3	1-7	1-7	0	5-7	1-7	1-7	1-7	6	1-7	1, 2	4	.....	.....	5, 6
Port Huron.....	75	X	750	0	.....	T.S.	X	100	100	250	X	X	5, 6	.....	.....	4-8	1-8	8	4-8	1-8	5-8	.....	3, 4	1, 2	2, 3	.....	.....	.....	6-8
Saginaw.....	.....	X	800	1	600	.....	X	700	500	600	X	X	1-8	.....	1-4	4-8	4-8	.....	.....	1-8	3-8	1-4	3, 4	1, 2	1-4	.....	.....	.....	5-8
Do. (W. S.).....	.....	X	800	3	2,175	T.S.	X	3,000	500	1,400	X	X	7, 8	.....	5-8	7, 8	1-8	8	.....	1-8	3-8	1-4	3, 4	1, 2	1, 4	.....	5, 6	.....	.....
Sault Ste. Marie.....	40	X	850	0	.....	T.S.	X	150	150	300	X	X	4-8	7, 8	1-8	4-8	1-8	.....	3-7	1-8	1-8	1-4	3, 4	1, 2	1, 4	.....	.....	.....	.....
Traverse City.....	75	X	630	0	.....	T.S.	.....	150	50	225	X	X	3-6	4-8	1-5	4-8	1-8	.....	5-8	1-8	4-8	.....	.....	2, 3	1, 4	1	.....	.....	5-8
MINNESOTA.																														
Mankato.....	100	X	765	0	.....	T.S.	X	25	50	50	X	.....	5-7	.....	1-4	5-7	1-7	8	5-7	1-7	1-7	K.1	0	.....	K.1	.....	.....	.....	.....
Minneapolis.....	60-120	X	2,400	X	{1,000-1,500}	T.S.	X	.....	.....	4,000	X	.....	4-8	5-8	1-4	5-8	1-8	7, 8	5-8	1-8	1-8	1-8	0	0	1-8	2-6	0	0	6-8

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or handwork in the following are taught—									
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.	
1	2												14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
NEW JERSEY—continued.																														
East Orange.....	60-80	X	\$1,400	1	\$600	T. S.	X	\$75	\$700	\$750	X	X	1-8	1-3	1-8	1-8	1-8	8	4-8	1-8	1-8	1-8	1-4	4	2	1,2	5-8
Elizabeth.....	60-120	X	1,100	0	.....	T. S.	X	3,000	500	2,500	X	X	1-8	.....	.....	1	.....	5-8	7,8	1-8	7,8	1-8	1-5	1-4	1-4	.....	.....	.....	7,8
Hackensack.....	90	X	1,600	X	.....	T. S.	X	3,200	600	.....	X	X	1-4	5-8	6-8	4-8	1-8	5-8	4-8	1-8	1-8	1-8	3,4	1,2	1-4	1-4	7,8	7,8	5,8
Hoboken.....	40	0	.....	.....	1,200	.....	X	.....	600	350	.....	X	.....	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	.....	.....	5,6	5	.....	.....	7
Irvington.....	60	X	1,200	0	.....	T. S.	0	.....	.....	.....	X	X	1-8	1-8	1-5	1-8	1-8	7,8	4-8	1-8	1-8	1-8	1-4	1-4	1-4	.....	.....	.....	5-8
Long Branch.....	60-90	X	1,050	1	950	T. S.	X	.....	.....	300	X	X	4-8	4-8	1-8	1-8	1-8	7,8	4-8	1-8	1-8	1-8	1-4	1-4	1-4	.....	.....	.....	5-8
Millville.....	90	X	700	.....	.....	T. S.	X	200	200	400	X	X	3-8	5-8	1-5	1-8	1-8	5-8	6-8	1-8	1-8	1-5	2-5	1-3	1-3	1-4	.....	.....	5-8
Montclair.....	60-90	X	2,000	11	1,050-1,700	T. S.	X	18,900	.....	1,250	X	X	.....	.....	.....	.....	.....	7,8	5-8	1-8	.....	1-8	5	.....	1-3	4,5	8	.....	6-8
Newark.....	60	X	2,000	2	1,000-1,600	T. S.	X	20,452	.....	2,000	X	X	1	1-8	1	1-8	1-8	5-8	5-8	1-8	1-8	1-8	1-4	1,2	1-4	.....	6-8	.....	5-8
North Bergen.....	60	X	700	0	.....	T. S.	0	175	.....	.....	X	X	1-3	5-8	1-3	1-8	1-8	5-8	4-8	1-8	1-8	1-8	.....	.....	.....	.....	.....	.....	.....
Orange.....	90	X	1,000	0	.....	T. S.	.....	.....	.....	955	X	X	.....	.....	.....	.....	7,8	7,8	.....	.....	.....	4	.....	.....	1-3	.....	.....	.....	5-8
Passaic.....	75	X	1,150	1	1,000	T. S.	X	.....	500	1,600	X	X	.....	7,8	1-3	3-8	1-7	3,7	5-8	1-8	5,6	1-4	3,4	.....	1-4	1	.....	.....	.....
Paterson.....	.....	X	1,000	X	750-900	S.	X	.....	.....	.....	X	X	7,8	.....	7,8	5-8	1-4	.....	.....	1-8	7,8	1-4	1-7	1	1	1	7,8	0	7,8
Perth Amboy.....	40	X	950	0	.....	T. S.	X	.....	.....	748	X	X	4-8	6-8	1-5	4-8	1-8	.....	5-8	1-8	5-8	1-8	1-5	.....	1-5	1-5	.....	.....	6-8
Trenton.....	60-90	X	1,500	X	.....	T. S.	X	15,000	.....	3,500	X	X	1-8	1-8	1-8	1-8	1-8	.....	1-8	1-8	1-8	3-8	4	.....	3,4	.....	.....	.....	5-8
West Hoboken.....	60-120	X	1,700	1	850	T. S.	X	800	1,000	1,200	X	0	.....	6-8	1-4	1-8	1-8	5-8	6-8	1-8	1-8	.....	.....	1,2	1-8	1	.....	.....	.....
West New York.....	60-105	X	1,125	X	850	T. S.	X	100	200	350	X	X	1-8	6-8	1-8	1-8	1-8	4-8	4-8	1-8	1-8	1-8	4,5	1,2	1-8	.....	7,8	.....	7,8
West Orange.....	.....	X	900	1	800	T. S.	X	.....	.....	.....	X	X	2,3	1-8	1-3	3-8	1-8	.....	5-8	1-8	1-8	1-8	4,5	1,2	1-3	.....	7,8	.....	.....
NEW MEXICO.																														
Albuquerque.....	100-150	X	900	0	.....	T. S.	X	.....	.....	.....	X	X	1-8	4-8	1-5	1-8	1-8	6-8	3-7	1-8	.....	.....	.....	1,2	1-7	.....	.....	.....	.....
NEW YORK.																														
Albany.....	150	X	1,900	.....	900	T. S.	X	200	800	1,500	X	X	.....	1-8	1	1-8	1-8	.....	.....	1-8	1-8	1-8	1-6	1-6	1-6	1-3	0	0	.....
Auburn.....	90	X	900	1	750	T. S.	X	500	500	X	X	3-8	6-8	1-4	4-8	1-8	6-8	6-8	1-8	4-8	1-8	3,4	1,2	1-4	1-4	1-4	6-8	

Binghamton.....	60'	×	900	0	S.	×
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1 In one school.

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or hand-work in the following are taught—								
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
OHIO.	50-75	X	\$1,200	0	0	T. S.	X	0	0	0	X	X	1,2	1-8	1-4	1-8	1-8	5-8	5-8	1-8	1-8	1-8	1-8	0	1-8	1,2	0	0	0
	50	X	1,000	0	0	T. S.	0	0	0	\$300	X	X	1-8	1-8	1-8	1-8	1-8	6-8	4-8	1-8	4-8	1-4	0	0	1-4	0	0	0	0
	60	X	1,720	0	0	T. S.	0	0	0	0	X	X	3-6	6-9	1-4	1-9	1-9	8,9	2-9	1-9	1-9	2-4	2-4	2-4	1-4	0	0	0	7,8
	100-150	X	1,200	0	0	T. S.	X	X	0	0	X	X	1-8	7,8	5-8	5-8	1-8	7,8	5-8	5-8	5-8	2-4	1-8	1-8	1-8	0	0	0	0
	90	X	1,700	0	900	T. S.	X	X	0	0	X	X	0	1-8	1-4	1-8	1-8	7,8	6-8	1-8	1-8	1-8	1-8	0	1-8	1,2	0	0	0
	60	X	1,600	X	850	T. S.	X	X	0	3,000	X	X	5	1-8	1-4	1-8	1-8	6,7,8	6,7,8	1-8	1-8	1-5	0	0	1-5	1-3	0	0	0
	90-125	X	2,400	X	1,050	S.	X	0	0	20,000	0	X	1,2	1-8	1,2	1-8	1-8	7,8	6-8	1-8	1-8	1,2	0	0	1-8	1,2	0	0	0
	80	X	2,000	2	900	T. S.	X	0	0	4,000	X	X	1-3	1-8	1-3	1-8	1-8	0	6-8	1-8	2-8	1-8	0	0	1-8	1,2	0	0	0
	60	X	175	0	0	T. S.	X	0	0	200	X	X	0	0	0	1-8	1-8	6-8	7-8	1-8	1-8	6-8	1-3	0	1-3	0	0	8	7
	30	X	800	0	0	T. S.	X	0	0	0	0	X	0	0	0	1-8	1-8	6-8	7-8	1-8	1-8	6-8	1-3	0	1-4	0	0	0	6-8
	60-75	X	855	1	765	T.	X	100	0	350	X	X	5-8	6-8	7,8	4-8	1-8	0	5-8	1-5	1-8	1-8	0	5	1-3	0	0	0	0
	180	X	630	0	0	T. S.	X	0	0	0	0	X	4,5	5-8	5,6	6-8	4-8	8	5-7	3-8	7,8	6-8	0	0	1-8	0	0	0	6-8
	45	X	1,694	0	0	T. S.	X	0	0	600	0	X	3-8	1-8	1-5	1-8	1-8	0	3-8	1-8	1-8	1-8	3-5	3-5	1-4	0	0	0	0
	75	X	0	0	0	T. S.	X	0	10	\$400	200	X	X	3-7	1-7	1-7	1-7	7,8	3-7	1-7	1-7	1-7	0	1-3	1-7	0	0	0	0
	50	X	1,525	0	0	T. S.	X	0	0	200	400	X	X	6-8	3-8	4-8	1,2	7,8	7,8	1,2	7,8	0	2,3	2,3	1,2	0	0	0	0
	60	X	765	0	0	T. S.	X	0	0	0	0	X	7,8	7	6-8	4-8	3-5	6-8	7,8	1-8	1-8	1-8	2,3	2,3	1,2	0	0	0	6-8
90	X	800	0	0	T. S.	X	0	0	0	2,000	X	X	0	0	0	0	6-8	7,8	1-8	1-8	1-8	0	0	1-5	0	0	0	6-8	
Newark	60-120	X	1,000	X	575	T. S.	X	100	100	150	X	X	8	1-8	1-8	1-8	1-8	7,8	7,8	1-8	1-8	1-8	4	2-4	1-8	0	0	0	7,8
Norwood	60-120	X	1,100	0	0	T. S.	X	0	0	200	X	X	1-4	3-8	1-4	1-4	1-8	6-8	6-8	1-4	1-4	1-8	3-6	1-7	1-4	0	0	0	6-8
Piqua	60-90	X	800	0	0	T. S.	X	0	0	0	X	X	7,8	4-8	4-8	1-8	1-8	7,8	6-8	1-8	3-8	1-8	1-7	1-4	0	0	0	0	6-8
Portsmouth	60-90	X	825	0	0	T. S.	X	0	0	1,600	X	X	7,8	4-8	4-8	1-8	1-8	7,8	6-8	1-8	3-8	1-8	3-6	1-7	1-4	0	0	0	6-8
Springfield	75-100	X	1,000	0	0	T.	X	0	0	1,500	X	X	0	0	0	0	7,8	7,8	6-8	1-8	7,8	7,8	4	1	1-3	0	0	0	6-8
Tiffin	75	X	1,800	0	900	T. S.	X	1,000	6,000	2,211	X	X	1-4	1-8	1-4	5-7	1-8	6-8	6-8	1-8	1-8	1-8	4	1	1-3	0	0	0	6-8
Toledo	60	X	1,350	X	0	T. S.	X	0	0	1,500	X	X	1-4	1-8	1-3	1-8	1-8	7,8	6-8	1-8	1-8	1-8	2-6	1-2	1-8	0	0	0	6-8
Youngstown	60	X	1,400	0	0	T. S.	X	0	0	0	X	X	7,8	7,8	1-8	1-8	1-8	7,8	6-8	1-8	1-8	1-8	4	1	1-3	0	0	0	6-8
Zanesville	100-150	X	1,000	0	0	T. S.	X	0	50	0	X	X	7,8	7,8	1-8	1-8	1-8	7,8	6-8	1-8	1-8	1-8	2-6	1-2	1-8	0	0	0	6-8

OKLAHOMA.														
Enid.....	225	X	720	0	T.S.	X	50	30	100	X	X	1-8	1-8	1-8
Guthrie.....	40-100	X	630	0	T.S.	X	100	.....	.....	X	X	1-8	1-8	1-8
McAlester.....	60-90	X	425	0	T.S.	X	600	.....	600	X	X	1-8	1-8	1-8
Muskogee.....	90-135	X	1,000	0	T.S.	X	.....	200	550	X	X	1-8	1-8	1-8
Oklahoma City.....	60-90	X	1,200	0	S.	X	.....	600	2,000	X	X	1-8	1-8	1-8
OREGON.														
Salem.....	120	X	1,000	X	T.S.	X	.....	1,000	500	X	X	1-8	1-8	1-8
PENNSYLVANIA.														
Allentown.....	90	X	800	0	T.S.	X	0	.....	.....	X	X	1-8	1-8	1-8
Altoona.....	60	X	1,000	X	S.	X	500	1,000	500	X	X	1-8	1-8	1-8
Bradock.....	40	X	1,080	0	T.S.	X	10	150	200	X	X	1-8	1-8	1-8
Bradford.....	60-75	X	810	0	T.S.	X	.....	500	300	X	X	1-8	1-8	1-8
Butler.....	75	X	765	0	T.S.	X	2,000	500	1,000	X	X	1-8	1-8	1-8
Carlisle.....	60	X	728	0	T.S.	X	50	200	150	X	X	1-8	1-8	1-8
Chester.....	90	X	675	0	S.	X	200	300	2,000	X	X	1-8	1-8	1-8
Coatesville.....	60-90	X	1,000	0	T.S.	X	.....	.....	.....	X	X	1-8	1-8	1-8
Columbia.....	200	X	630	0	T.	X	.....	.....	100	X	X	1-8	1-8	1-8
DuBols.....	120	X	720	0	T.S.	X	.....	1,000	400	X	X	1-8	1-8	1-8
Duquesne.....	45-75	X	900	0	T.	X	.....	.....	.....	X	X	1-8	1-8	1-8
Erle.....	60	X	950	0	T.	X	93	483	500	X	X	1-8	1-8	1-8
Harrisburg.....	.....	X	1,100	X	T.	X	.....	3,000	2,000	X	X	1-8	1-8	1-8
Harleton.....	90	X	900	1	S.	X	125	800	350	X	X	1-8	1-8	1-8
Homestead.....	120	X	990	1	T.S.	X	.....	.....	350	X	X	1-8	1-8	1-8
Johnstown.....	100	X	1,300	.....	T.S.	X	.....	.....	1,800	X	X	1-8	1-8	1-8
Lebanon.....	60	X	685	0	T.S.	X	.....	.....	349	X	X	1-8	1-8	1-8
McKeesport.....	120	X	1,200	0	T.S.	X	10,000	5,000	1,500	X	X	1-8	1-8	1-8
McKees Rocks.....	120	X	675	0	T.S.	X	.....	100	461	X	X	1-8	1-8	1-8
Mount Carmel.....	100	X	720	0	T.S.	X	.....	.....	.....	X	X	1-8	1-8	1-8
Norristown.....	60	X	900	0	T.S.	X	500	500	1,000	X	X	1-8	1-8	1-8
Philledelphia.....	105	X	4,000	10	S.	X	.....	.....	.....	X	X	1-8	1-8	1-8
Pheonixville.....	90	X	850	0	T.S.	X	250	500	300	X	X	1-8	1-8	1-8
Pittsburgh.....	60-200	X	3,000	12	S.	X	.....	.....	.....	X	X	1-8	1-8	1-8
Reading.....	60	X	800	0	T.S.	X	1,500	3,500	1,200	X	X	1-8	1-8	1-8
Scranton.....	90	X	900	2	T.S.	X	.....	.....	1,900	X	X	1-8	1-8	1-8
Sharon.....	135	X	900	0	T.S.	X	.....	200	516	X	X	1-8	1-8	1-8
Shenandoah.....	100-175	X	630	0	T.	X	.....	.....	.....	X	X	1-8	1-8	1-8
Stealtion.....	90	X	1,080	0	T.S.	X	.....	.....	500	X	X	1-8	1-8	1-8
Warren.....	75	X	675	0	T.S.	X	.....	500	400	X	X	1-8	1-8	1-8
Washington.....	100-200	X	675	0	T.S.	X	.....	300	600	X	X	1-8	1-8	1-8
West Chester.....	60	X	1,500	X	T.S.	X	400	600	730	X	X	1-8	1-8	1-8
Wilkes Barre.....	100-200	X	1,100	1	S.	X	.....	.....	.....	X	X	1-8	1-8	1-8
Wilkinsburg.....	80	X	1,000	0	T.S.	X	.....	.....	450	X	X	1-8	1-8	1-8
Williamsport.....	90	X	980	0	T.S.	X	100	800	400	X	X	1-8	1-8	1-8
York.....	60	X	855	X	T.S.	X	.....	.....	1,200	X	X	1-8	1-8	1-8

[illegible]

TABLE III.—Drawing in city schools (*elementary grades*)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or hand-work in the following are taught—								
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
KANSAS.																													
Atchison.....	60-120	0					X				0	X	0	4-8	7-8	4-8	5-8		8	3-8	7-8	1			1				6-8
Fort Scott.....	80	X	\$810	0		T. S.	0		0		0	X	1-8	7-8	1-8	1-8	4-8		5-8	1-8	1-8								
Kansas City.....		X	1,188	0		T. S.	0				X	X	1-8	7-8	1-8	1-8	1-8		1-8	1-8	1-8								
Lawrence.....	60	X	540	0		T. S.	X				0	X	1-8	7-8	1-8	1-8	1-8		1-8	1-8	1-8				1-8	1-4			
Leavenworth.....	100	X	765	0		T. S.	X	\$3,000		\$600	X	X	4-8	7-8	1-8	1-8	1-8	7-8	1-8	1-8	5-8	1-8	4, 5	1-3	1-8				5-8
Topeka.....	60	X	1,000	0		T. S.	X	100	\$200	400	X	X	1-8	5-8	1-8	1-8	1-8	5-8	5-8	1-8	1-8	1-5	4		1-5	5			
KENTUCKY.																													
Frankfort.....	40	X	473	0		T.	X			500	0	X	1-8	1-8	1-8	1-8	1-8	6-8	4-8	1-8	5-8	7-8			1-8				
Henderson.....	40-60	X	750	0		T. S.	X	50	150	200	X	X	2-8	5-8	1-8	1-8	1-8		5-8	1-8	1-8								
Louisville.....	90	X	1,500	0		T. S.	X	3,000		3,102	X	X	5-8	6-8	1-8	5-8	1-8	5-8	5-8	1-8	1-8	1-8	2-5	1-4	1-8	1-4	0	0	4-8
Newport.....	50	X	900	1	\$750	T. S.	X				0	X		1-8	1-8	1-8	1-8	7-8	5-8	1-8	1-8	1-8			1-8				
Owensboro.....	40	0		0		T. S.	X			50	X	X			1-8	1-8	1-8			1-8					1, 2	1			
Paducah.....	200	X	800			T. S.	X				0	X																	
LOUISIANA.																													
New Orleans.....	60	X	1,250	X	{ 600-800 }	S.	X	0	0	2,000	X	X	1-8	2-8	1-8	1-8	1-8	5-8	6-8	1-8	1-8	1-8	5-8	2-4	1-8	1-8			
MAINE.																													
Augusta.....	90	X	650	0		S.	X	600	2,000	450	X	X	4-9	1-9	1-9	1-9	1-9	1-9	5-9	1-9	1-9	1-9	1-4	1-4	1-4	4-9	4-9	5-9	
Lewiston.....	60	X	1,000	0		T. S.	X	60		170	X	X	6-9	6-9		3-9	1-9		6-9	1-9	3-9	1-9			1-9				
MARYLAND.																													
Baltimore.....	60	X	1,200	8	800	T. S.	X				X	X	7-8	7-8	1-4	1-8	1-8		7-8	1-8	1-8	1-8			1-8	1-3			
Cumberland.....	80	X	1,300	0		T. S.	X				X	X	1-4	3, 4	1-4	1-4	1-4			1-4	1-4	1-4	3, 4	3, 4	1-4				
Hagerstown.....	120	0					X			525	X	X				5-8	1-8	7-8			7-8	7-8			1				7-8

[illegible]

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or hand-work in the following are taught—									
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.	
1	2												14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
MICHIGAN.																														
Adrian.....	120	X	\$1,100	0	\$400	T.S.	X	\$75	\$200	.....	X	X	{3, 7, 8}	5-8	1-8	1-8	1-8	.....	7, 8	1-8	1-8	1-4	{1, 3, 4}	1-3	1-4	1	.....	.....	.....
Alpena.....	120	X	720	0	.....	T.S.	X	100	.....	.....	X	X	3-8	6-8	1-6	3-8	1-8	7, 8	4-8	1-8	4-8	1-3	.....	.....	.....	.....	.....	.....	.....
Ann Arbor.....	100	X	950	X	300	T.S.	0	3,000	1,800	\$353	X	X	.....	.....	.....	3-8	3-9	.....	{6, 7, 9}	1-9	3-9	1-8	3-5	2-4	1-3	2	.....	.....	4-8
Bay City.....	125	X	1,000	X	.....	T.S.	X	1,000	500	.....	0	X	8	.....	8	6-8	1	.....	8	7, 8	8	5-7	3-5	2	2	8	.....	8	5-8
Calumet.....	100-150	X	1,400	X	800	S.	0	.....	150	800	.....	X	1-8	1-8	1-8	1-8	1-8	.....	4-8	1-8	1-8	.....	.....	1-8	.....	.....	.....	.....	.....
Detroit.....	60	X	2,000	X	{1,200-1,300}	T.S.	0	.....	.....	5,000	.....	X	0	.....	.....	3-8	1-8	.....	7, 8	1-8	1-8	.....	.....	.....	.....	.....	.....	.....	.....
Escanaba.....	120	X	800	0	.....	T.S.	X	50	250	525	.....	X	5-8	.....	1-4	4-8	5-8	.....	8	1-8	6-8	6-8	6-8	6-8	6-8	.....	.....	.....	8
Flint.....	90	X	1,000	0	.....	T.	X	.....	.....	700	.....	X	.....	7, 8	5-8	4-8	1-8	5-8	5-8	8	3-8	1-4	3, 4	1, 2	1, 2	.....	.....	8	.....
Grand Rapids.....	80-150	X	1,200	0	.....	S.	X	200	200	2,000	.....	X	4-7	5-8	1-8	4-8	1-8	8	4-8	1-8	1-8	1-8	2-5	1-5	1-8	1-8	5-8	7, 8	5-8
Holland.....	120	X	650	0	.....	T.S.	X	100	300	500	.....	X	3-8	4-8	1-3	3-8	1-8	.....	4-8	1-8	3-8	1-4	3, 4	1, 2	3, 4	1-4	0	0	0
Ironwood.....	100	X	900	0	.....	S.	X	30,000	500	750	.....	X	4-8	3-8	2-8	1-8	3-8	7, 8	6-8	1-8	4-8	5-8	0	5, 6	1, 2	1-8	0	0	6-8
Ishpeming.....	90-100	X	1,000	0	.....	T.	X	500	1,000	.....	.....	0	1-4	1-8	1-4	1-8	1-8	6-8	4-8	1-8	1-8	1-8	3-5	2, 3	1-8	.....	.....	.....	.....
Kalamazoo.....	90-150	X	900	X	{540-750}	T.S.	X	.....	.....	.....	.....	X	1-8	1-8	1-8	1-4	1-8	4	4-8	1-8	3-8	1-5	2-4	2-4	1-4	1-5	.....	.....	.....
Lansing.....	125	X	800	.....	.....	T.	0	.....	.....	100	.....	X	1-8	.....	1-8	1-8	1-8	.....	7, 8	1-8	4-8	.....	0	0	5, 6	0	0	0	7, 8
Marquette.....	60	X	750	0	.....	T.S.	X	200	10	200	.....	X	1-8	3-8	1-8	1-8	1-8	7, 8	4-8	1-8	1-8	1-8	4-8	1-3	1, 2	.....	.....	.....	7, 8
Menominee.....	100	X	900	0	.....	T.S.	X	400	400	543	.....	X	1-8	5-8	1-8	1-8	1-8	6-8	5-8	1-8	5-8	1-8	4-6	.....	1-3	.....	.....	.....	6-8
Muskegon.....	80-180	X	1,000	0	.....	T.S.	X	.....	.....	.....	.....	X	4-7	1-7	1-3	1-7	1-7	0	5-7	1-7	1-7	1-7	6	1-7	1, 2	4	.....	.....	5, 6
Port Huron.....	75	X	750	0	.....	T.S.	X	100	100	250	.....	X	5, 6	.....	.....	4-8	1-8	8	4-8	1-8	5-8	.....	3, 4	1, 2	2, 3	.....	.....	.....	6-8
Saginaw.....	.....	X	800	1	600	.....	X	700	500	600	.....	X	1-8	.....	1-4	4-8	4-8	.....	.....	1-8	3-8	1-4	3, 4	1, 2	1-4	.....	.....	.....	6-8
Do. (W. S.).....	.....	X	800	3	2,175	T.S.	X	3,000	500	1,400	.....	X	7, 8	.....	5-8	7, 8	.....	8	.....	1-8	1-8	1-4	3, 4	1, 2	1-4	.....	5, 6	.....	.....
Sault Ste. Marie.....	40	X	850	0	.....	T.S.	X	150	150	800	.....	X	4-8	7, 8	1-8	4-8	1-8	.....	3-7	1-8	1-8	1, 3	K. 1	K.	1, 4	1	.....	.....	.....
Traverse City.....	75	X	630	0	.....	T.S.	.....	150	50	225	.....	X	3-6	4-8	1-5	4-8	1-8	.....	5-8	1-8	4-8	.....	.....	2, 3	.....	.....	.....	.....	5-8
MINNESOTA.																														
Mankato.....	100	X	785	0	.....	T.S.	X	25	50	50	.....	.....	5-7	.....	1-4	5-7	1-7	8	5-7	1-7	1-7	K. 1	.....	.....	K. 1	.....	.....	.....	.....
Minneapolis.....	60-120	X	2,400	X	{1,000-1,500}	T.S.	X	.....	.....	4,000	.....	.....	4-8	5-8	1-4	5-8	1-8	7, 8	5-8	1-8	1-8	1-8	0	0	1-8	2-6	0	0	6-8

City	20-40	40-60	60-80	80-100	100-120	120-140	140-160	160-180	180-200	200-220	220-240	240-260	260-280	280-300	300-320	320-340	340-360	360-380	380-400	400-420	420-440	440-460	460-480	480-500	500-520	520-540	540-560	560-580	580-600	600-620	620-640	640-660	660-680	680-700	700-720	720-740	740-760	760-780	780-800	800-820	820-840	840-860	860-880	880-900	900-920	920-940	940-960	960-980	980-1000	1000-1020	1020-1040	1040-1060	1060-1080	1080-1100	1100-1120	1120-1140	1140-1160	1160-1180	1180-1200	1200-1220	1220-1240	1240-1260	1260-1280	1280-1300	1300-1320	1320-1340	1340-1360	1360-1380	1380-1400	1400-1420	1420-1440	1440-1460	1460-1480	1480-1500	1500-1520	1520-1540	1540-1560	1560-1580	1580-1600	1600-1620	1620-1640	1640-1660	1660-1680	1680-1700	1700-1720	1720-1740	1740-1760	1760-1780	1780-1800	1800-1820	1820-1840	1840-1860	1860-1880	1880-1900	1900-1920	1920-1940	1940-1960	1960-1980	1980-2000	2000-2020	2020-2040	2040-2060	2060-2080	2080-2100	2100-2120	2120-2140	2140-2160	2160-2180	2180-2200	2200-2220	2220-2240	2240-2260	2260-2280	2280-2300	2300-2320	2320-2340	2340-2360	2360-2380	2380-2400	2400-2420	2420-2440	2440-2460	2460-2480	2480-2500	2500-2520	2520-2540	2540-2560	2560-2580	2580-2600	2600-2620	2620-2640	2640-2660	2660-2680	2680-2700	2700-2720	2720-2740	2740-2760	2760-2780	2780-2800	2800-2820	2820-2840	2840-2860	2860-2880	2880-2900	2900-2920	2920-2940	2940-2960	2960-2980	2980-3000	3000-3020	3020-3040	3040-3060	3060-3080	3080-3100	3100-3120	3120-3140	3140-3160	3160-3180	3180-3200	3200-3220	3220-3240	3240-3260	3260-3280	3280-3300	3300-3320	3320-3340	3340-3360	3360-3380	3380-3400	3400-3420	3420-3440	3440-3460	3460-3480	3480-3500	3500-3520	3520-3540	3540-3560	3560-3580	3580-3600	3600-3620	3620-3640	3640-3660	3660-3680	3680-3700	3700-3720	3720-3740	3740-3760	3760-3780	3780-3800	3800-3820	3820-3840	3840-3860	3860-3880	3880-3900	3900-3920	3920-3940	3940-3960	3960-3980	3980-4000	4000-4020	4020-4040	4040-4060	4060-4080	4080-4100	4100-4120	4120-4140	4140-4160	4160-4180	4180-4200	4200-4220	4220-4240	4240-4260	4260-4280	4280-4300	4300-4320	4320-4340	4340-4360	4360-4380	4380-4400	4400-4420	4420-4440	4440-4460	4460-4480	4480-4500	4500-4520	4520-4540	4540-4560	4560-4580	4580-4600	4600-4620	4620-4640	4640-4660	4660-4680	4680-4700	4700-4720	4720-4740	4740-4760	4760-4780	4780-4800	4800-4820	4820-4840	4840-4860	4860-4880	4880-4900	4900-4920	4920-4940	4940-4960	4960-4980	4980-5000	5000-5020	5020-5040	5040-5060	5060-5080	5080-5100	5100-5120	5120-5140	5140-5160	5160-5180	5180-5200	5200-5220	5220-5240	5240-5260	5260-5280	5280-5300	5300-5320	5320-5340	5340-5360	5360-5380	5380-5400	5400-5420	5420-5440	5440-5460	5460-5480	5480-5500	5500-5520	5520-5540	5540-5560	5560-5580	5580-5600	5600-5620	5620-5640	5640-5660	5660-5680	5680-5700	5700-5720	5720-5740	5740-5760	5760-5780	5780-5800	5800-5820	5820-5840	5840-5860	5860-5880	5880-5900	5900-5920	5920-5940	5940-5960	5960-5980	5980-600
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TAB. III. - Drawing in city schools (elementary grade) (continued).

[illegible]

[illegible]

! In one school.

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or handwork in the following are taught—									
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
OHIO.	Akron.....	50-75	X	\$1,200	0		X				X	X	1-2	1-8	1-4	1-8	1-8	5-8	1-8	1-8	1-8	1-8			1-8	1-2				
	Alliance.....	50	X	1,000	0		0				X	X	1-8	1-8	1-8	1-8	1-8	6-8	5-8	1-8	4-8	1-4	0	0	1-4	0				
	Ashtabula.....	60	X	720	0		0			\$300	X	X	3-6	6-9	1-4	1-9	1-9	8,9	2-9	1-9	1-9	2-4	2-4		1-4					
	Canton.....	100-150	X	1,200	0		X				X	X	1-8	7,8	5-8	5-8	1-8	7,8	5-8	1-8	1-8	1-8			1-8					
	Chillicothe.....	90	X	1,700			X			500	X	X	1-8	1-8	1-4	1-8	1-8	7,8	6	1-8	1-8	1-8			1-8					
	Cincinnati.....	60	X	1,600-2,400	X		X			3,000	X	X	5	1-8	1-4	1-8	1-8	6,7,8	7,8	1-8	1-8	1-5	0	0	1-5	1-3				
	Cleveland.....	90-125	X	2,500	X		X			20,000	0	X	1,2	1-8	1,2	1-8	1-8	7,8	6-8	1-8	1-8	1,2			1-8					
	Columbus.....	80	X	2,000	2		X			4,000	X	X	1-8	1-8	1-3	1-8	1-8		6-8	1-8	2-8	1-8	0	0	1-8	1,2				
	East Liverpool.....	60	X	175	0		X			200	X	X				1-8	1-8	6-8	7-8	1-8	1-8	6-8	1-3		1-3					
	Elyria.....	30	X	800	0		X					0					1-8	6-8	7-8	1-8	1-8	1-8			1-4	K	8	7	6-8	
	Hamilton.....	60-75	X	855	1		X			350	X	X	5-8	6-8	7,8	4-8	1-8		5-8	1-5	1-8	1-8	1-8	5	1-3					
	Ironton.....	180	X	630	0		X					0			5-8	1-6	1-8			1-8	6-8	6-8			1-8					
	Lakewood.....	45	X	1,694	0		X					0		4,5	5-8	5,6	6-8	4-8	8	5-7	3-8	7,8	6-8			1-8				
	Lancaster.....	75	X				X			600	0	X	3-8	1-8	1-5	1-8	1-8	0	3-8	1-8	1-8	1-8	1-8	3-5		1-4	0	0	0	0
	Lorain.....	50	X	1,525	0		X			200	X	X	3-7	1-7	1-7	1-7	1-7	7,8	3-7	1-7	1-7	1-7	1-7	0	1-3	1-7	0	0	0	0
	Marion.....	60	X	765	0		0			400	X	X	6-8	3-8		4-8	1,2		7,8	1,2	7,8	7,8		2,3	1,2					
	Middletown.....	90	X	800	0		X						7,8	7	6-8	4-6	3-5		6-8	1-8	1-8	1-8			1,2					
	Newark.....	60-120	X	1,000			X			2,000	X	X						6-8	7,8	1-8		1-8			1-5					
	Norwood.....	60	X	1,100	X		X			150	X	X						7,8	7,8							1-5				
	Piqua.....	60-120	X	800	0		X			200	X	X	8	1-8	1-8	1-8	1-8		4-8	1-8	1-8	1-8	1-8	4	2-4	1-8	0	0	0	7,8
	Portsmouth.....	60-90	X	825	0		X				X	X	1-4	3-8	1-4	1-4	1-8	6-8	6-8	1-4	1-4	1-8	1-8			1-8				
	Springfield.....	75-100	X	1,000	0		X				1,600	X	X	7,8	4-8	4-8	1-8	1-8	7,8	6-8	1-8	3-8	1-8	3-6	1-7	1-4				
	Tiffin.....		X	800	0		X				500	0						7,8	7,8			7,8								
	Toledo.....	75	X	1,350	X		X				2,211	X	X	1-4	1-8	1-4	6-7	1-8	6-8	1-8	1-8	1-8	1-8	4	1	1-3				
	Youngstown.....	60	X	1,400			X			5,000	1,500	X	X	1-4	1-8	1-3	1-8	1-8	6-8	1-8	1-8	1-8	1-8	2-6	1-2	1-8				
	Zanesville.....	100-150	X	1,000	0		X			50		X	X	7,8	7,8	1-8	1-8	1-8		6-8	1-8	1-8	1-8			1-8				

[illegible]

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor employed.	Salary of director or supervisor.	Assistant teachers employed.	Salary of assistant teachers.	Does director teach or supervise?	Handwork taught with drawing.	Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by city.	Drawing correlated with other subjects.	Grades in which the following are taught—								Grades in which design or handwork in the following are taught—									
													Pose drawing.	Composition.	Illustration.	Object drawing.	Nature drawing.	Mechanical drawing.	Perspective.	Color.	Design.	Handwork.	Reeds and raffia.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
RHODE ISLAND.																														
Central Falls.....	70	X	750	0	216	T.S.	X	500	100	100	X	X	1-4	1-9	1-7	1-9	1-9	7-9	5-9	1-9	1-9	1-9	1-9	1-6	5	1-4	1-4	1-4	7-9	
Cranston.....	90	X	825	1	216	T.S.	X	500	500	500	X	X	3,4	1-8	1-8	1-8	6-8	6-8	1-8	1-8	1-8	1-8	1-6	1-3	1-4	1-4	1-4	1-4	7-9	
East Providence.....	60	X	750	0	216	T.S.	X	500	500	500	X	X	5-8	7,8	3,4	5-8	1-8	6-8	6-8	6-8	6-8	1-3	4,5	1-6	1-6	1-6	1-6	1-6	6-9	
Newport.....	75-90	X	900	1	800	T.S.	X	600	700	1,000	X	X	1,2	7,8	1-3	1-9	1-9	6-8	7,8	1-8	1-8	1-3	K	K	1-9	1-9	1,2	5,6	6-9	
Pawtucket.....	90-120	X	1,500	X	800	T.S.	X	2,500	400	1,000	X	X	1,3	1-9	1-9	1-9	1-9	4-9	4-9	1-9	1-9	1-9	1-9	1-6	1-6	1-6	1-6	1-6	7,8	
Warwick.....	75-90	X	1,000	X	500	T.S.	X	200	400	1,000	X	X	4-9	5-9	1-4	3-9	1-9	6-9	1-9	1-9	1-9	1-9	1-9	1-6	1-6	1-6	1-6	1-6	6-9	
Woonsocket.....	90	X	1,000	0	500	T.	X	200	400	400	X	X	4-9	5-9	1-4	3-9	1-9	6-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9	1-9	7-9	
SOUTH CAROLINA.																														
Charleston.....	60	0	0	0	0	0	0	0	0	0	0	X	5-7	5-7	1-7	1-7	1-7	6,7	5-7	1-7	1-7	1-7	0	0	1-6	0	0	0	6,7	
Columbia.....	180	0	0	0	0	0	X	1,000	0	400	X	X	1-4	5-7	1-3	1-7	1-3	6,7	5-7	1,2	1-4	1-4	0	0	1-6	0	0	0	6,7	
Spartanburg.....	90	0	0	0	0	0	0	0	0	0	0	0	1-4	1-3	1-3	1-7	1-3	6,7	5-7	1,2	1-4	1-4	0	0	1-6	0	0	0	6,7	
SOUTH DAKOTA.																														
Aberdeen.....	100	X	855	0	0	T.S.	X	100	0	400	X	X	4,5	1-8	1-8	4-8	1-8	1-8	1-8	1-8	1-8	1-8	4	2	1-4	1,2	1-4	1-4	7,8	
Sioux Falls.....	60	X	1,100	0	0	S.	X	0	0	1,124	X	X	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-4	1,2	1-4	1-4	7,8	
TENNESSEE.																														
Chattanooga.....	50-80	X	1,000	0	0	S.	X	200	0	200	X	X	1-8	1-8	1-8	1-8	1-8	7,8	5-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	7,8	
Nashville.....	150	X	1,780	2	980-1,080	T.S.	X	0	500	2,000	X	X	3-8	6-8	4-8	4-8	4-8	5-8	6-8	1-8	2-8	1-8	4	2	3	7	7	7	5-8	
TEXAS.																														
Beaumont.....	75	X	900	0	0	S.	X	0	0	0	0	X	4-7	1-8	1-8	4-7	1-8	8	0-8	1-7	1-6	1-4	1-6	1-3	1-3	1-3	1-3	1-3	1-6	
Cleburne.....	90	X	720	0	0	S.	X	0	0	0	0	X	1-6	1-8	1-8	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-4	1-6	1-3	1-3	1-3	1-3	1-6	

Dallas.....	75	X	1,600	1	855	T. S.	X	25	25	50	X	X	X	1-3	1-7	1-7	1-7	1-4	5-7	5-7	1-5	1-5	5-7	1-3	1-4	1-3	1-3	1-3	1-3
Galveston.....	80-150	X	1,105	X	540-720	T. S.	X	.....	.....	.....	X	X	X	1-8	5-8	4-8	1-8	1-8	5-8	1-8	1-8	3-8	1-8	1-4	1-2	1-6	.....	.....	1-8
Houston.....	75	X	1,100	0	.....	S.	X	100	.....	800	X	X	X	5-7	5-7	1-7	1-7	1-7	5-7	1-7	1-7	1-7	1-3	1-2	.....	6	.....	.....	5-8
Marshall.....	90	X	675	X	518	T.	X	.....	.....	1,200	0	X	X	1-7	.....	1-7	1-7	1-7	8	1-7	1-7	1-7	.....	1-4	6-7	.....	.....	.....	8
Palestine.....	60	0	.....	0	.....	.....	0	.....	.....	.....	0	0	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Antonio.....	75-150	X	1,020	0	.....	S.	0	750	.....	.....	0	X	X	.....	.....	.....	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Temple.....	100	X	750	0	.....	S.	.....	.....	.....	.....	0	X	X	1-6	1-4	1-6	1-6	.....	5,6	1-6	5,6	1-4	.....	.....	.....	.....	.....	.....	.....
UTAH.																													
Salt Lake City.....	30-80	X	2,000	1	1,400	T. S.	X	1,500	4,000	X	X	X	X	1-8	3-8	1-8	4-8	1-8	6-8	5-8	1-8	1-8	2,4	3	1-5	1-8	.....	.....	6-8
VERMONT.																													
Barre.....	60	X	700	.....	.....	T. S.	0	.....	100	X	X	X	X	.....	6-9	1-3	1-9	1-9	4-9	6-9	1-9	1-9	1-9	.....	1-4	.....	.....	.....	.....
Burlington.....	100	X	650	0	.....	S.	X	.....	.....	.....	0	0	0	.....	.....	.....	.....	.....	8,9	1-6	4-6	.....	.....	1-6	1-3	.....	.....	.....	.....
Rutland.....	75	X	700	0	.....	T. S.	0	.....	.....	.....	X	X	X	9	7,8	1-9	1-9	1-9	7-9	1-9	8,9	9	4,5	4,5	3,4	.....	.....	.....	7-9
VIRGINIA.																													
Newport News.....	80	X	630	0	.....	S.	X	.....	128	X	X	X	X	1-4	1-4	1-4	1-8	.....	.....	1-8	1-8	1-8	1-5	.....	1-1	1-6	.....	.....	.....
Portsmouth.....	30	0	.....	.....	.....	.....	X	1,000	.....	750	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	1-3	.....	.....	.....	.....	5-7
Richmond.....	40-50	0	.....	X	500-720	.....	X	.....	3,500	X	0	0	0	1-8	1-8	1-8	.....	.....	5-7	1-8	1-8	1-7	2-4	1-3	1-4	1,2	.....	.....	5-7
Roanoke.....	90	.....	.....	.....	.....	.....	X	.....	.....	.....	0	0	0	.....	2-5	1-4	5-7	.....	5-7	1-5	5-7	.....	.....	1,2	2,3	.....	.....	.....	6-8
Staunton.....	60	X	675	0	.....	T. S.	X	100	350	0	0	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,2	1,2	.....	.....	.....	6,7
WASHINGTON.																													
Aberdeen.....	90	X	1,050	0	.....	T. S.	0	100	645	X	X	X	X	6,7	5-8	1-8	5-8	1-8	6-8	7	1-8	5-8	1-5	4,5	1-5	.....	.....	.....	6-8
Bluefield.....	90	X	765	0	.....	T. S.	X	.....	1,000	0	0	0	0	1-8	1-8	1-8	1-8	.....	8	5-8	1-8	1-8	1-7	1,2	1-8	1-8	.....	.....	.....
Everett.....	75	X	1,400	0	.....	T.	0	.....	.....	.....	X	X	X	1-8	1-8	1-8	1-8	.....	4-8	1-8	1-8	.....	3-5	1	.....	6	.....	.....	7,8
North Yakima.....	60	X	1,000	0	.....	T. S.	X	25	250	X	X	X	X	1-8	1-8	1-8	1-8	.....	3-8	1-8	1-8	.....	.....	.....	.....	.....	.....	.....	.....
Seattle.....	60	X	1,620	X	1,370	T.	X	590	470	29,000	X	X	X	1-8	1-8	1-8	1-8	4,5	4-8	1-8	1-8	3	2,3	1-3,5	1-3	.....	.....	.....	.....
Spokane.....	65-100	X	1,600	0	.....	T. S.	X	.....	.....	.....	X	X	X	1-5	1-8	1-4	1-8	6-8	5-8	1-8	1-8	.....	1,2	1-5	1,2	.....	.....	.....	.....
Tacoma.....	60-120	X	1,420	0	.....	T. S.	X	350	400	1,964	0	0	0	3-6	4-8	1-3	1-8	.....	5-8	1-8	1-8	3,4	1,3	1,2	1,2	.....	.....	.....	.....
Walla Walla.....	60-90	X	1,200	0	.....	T. S.	X	100	100	100	X	X	X	1-6	1-8	1-8	3-8	1-8	5-8	1-8	4-8	1-4	2,3	1-3	1-4	.....	.....	.....	6-8
WEST VIRGINIA.																													
Martinsburg.....	40-60	X	500	0	.....	T.	X	.....	65	X	X	X	X	4-8	.....	1-8	1-8	.....	5-8	1-8	5-8	1,2	2	0	1-3	0	0	0	0
Wheeling.....	75	X	1,200	0	.....	S.	X	.....	.....	.....	X	X	X	1-3	7,8	1-7	1-8	.....	4-8	1-8	3-8	1-8	5-7	3,4	1-8	.....	.....	.....	.....
WISCONSIN.																													
Ashland.....	90	X	900	0	.....	T. S.	X	50	500	500	X	X	X	4-8	4-8	1-3	1-8	.....	4-8	1-8	1-8	1-8	4,5	.....	1-8	1-3	.....	.....	.....
Beloit.....	60-90	X	900	0	.....	T. S.	X	200	.....	.....	X	X	X	1-8	1-8	1-8	1-8	.....	1-8	1-8	5-8	1-8	1-6	.....	1-8	K,1	.....	.....	6-8
Eau Claire.....	60	X	810	0	.....	S.	X	34	401	435	X	X	X	1-8	1-8	1-8	1-8	.....	4-8	1-8	1-8	1-8	.....	1-8	1-8	.....	.....	.....	.....

TABLE III.—Drawing in city schools (elementary grades)—Continued.

Location.	Minutes per week devoted to drawing.	Director or supervisor.	Salary of assistant teach-		Value of equipment in handwork.	Value of equipment in drawing.	Cost per year of material.	Materials supplied by	Grades in which the following are taught—										Grades in which design or hand-work in the following are taught—										
			\$	¢					9	10	11	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
WISCONSIN—continued.																													
Pond du Lac.....	100	X	8000	0	\$100	\$100	0	X	1-6	1-8	1-5	3-8	1-8	1-8	6-8	5-8	1-8	2-8	1-8	3-8	1-8	Handwork.	Reeds and rattles.	Yarns.	Paper and cardboard.	Clay.	Metal.	Leather.	Wood.
Janesville.....	100-125	X	675	0	140	25	\$150	X	3-8	7,8	1-3	4-8	1-8	1-8	7,8	5-8	7,8	4-8	1-8	3,4	K,1	3,4	K,1	K-2	K-4	1-8	7,8	5-8	5-8
Keosauqua.....	60-90	X	650	0	140	25	1,950	X	5-8	8	1-4	4-8	1-8	1-8	5-8	5-8	1-8	1-8	1-8	1-8	1-8	1-8	3	2,4	1-4	1,2	1-8	7,8	5-8
La Crosse.....	60	X	1,100	1	200	200	700	X	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	5-8
Madison.....	90	X	900	1	100	100	750	X	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	5-8
Manitowoc.....	125	X	850	0	100	100	200	X	4-8	1-8	4	4-8	1-8	1-8	5-8	5-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	5-8
Marinette.....	125	X	720	0	1,800	100	600	X	1-8	1-8	1-8	1-8	1-8	1-8	7,8	7,8	1-8	7,8	1-8	7,8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	5-8
Milwaukee.....	90	X	2,100	0	5,000	3,000	4,000	X	1-8	1-8	1-8	1-8	1-8	1-8	7,8	7,8	1-8	2-8	1-8	1-8	1-8	1-8	1-8	K-4	K-4	1-8	7,8	5-8	5-8
Racine.....	60-150	X	1,025	0	200	500	300	X	1-8	1-8	1-8	1-8	1-8	1-8	1-8	5-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	5-8
Sheboygan.....	60-120	X	850	0	100	100	200	X	1-8	5-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	4-8
Wausau.....	150	X	1,035	1	200	400	600	X	1-8	4-7	1-8	1-8	1-8	1-8	8	7,8	1-8	5-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	5-8

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
													School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
			First year.	Second year.	Third year.	Fourth year.																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
ALABAMA—CON.																									
Odenville.....	St. Clair County High School..	R	120	120				0			C.	0											X	\$25	
Oneonta.....	Blount County High School..	R	54	54	54	54		0			V.	X	X										0	6	
Opelika.....	Lee County High School.....	R	48	48	0	0		X															X	0	
Phoenix.....	Graded School (negro).....	E	54	54	67	67		0												0	0			0	
Plantersville.....	Dallas County High School..	R	120	120	0	0		0					X							\$50	300	\$50	0	50	
Prattville.....	Autauga County High School..	R						0			P.	0	X					X			0	0			
Reform.....	Pickens County High School..	R	24	24	0	0		0															X	15	
Rockford.....	Coosa County High School..	R						0			P.	0	X								200		X	0	
Section.....	High School.....	E	27	27	27			X	\$1,350	A	P. C.	0	X					X					X	75	
Selma.....	do.....	R	48	36	36			0																	
Slocumb.....	do.....	R	40	20	20	20		0			P.	0													
Thomaston.....	Marengo County High School..	R	24	24	0	0		0															X	0	
Union Springs.....	High School.....	R	60	60	55	55		0					X												
ARIZONA.																									
Bisbee.....	High School.....	R, E	85	85	85	85				A. N.	P. C. V.	X	X	X	X	X	X	X	X	500	100		X	500	
Kingman.....	Graded School.....	R	36	36	36	36		X			P. V.	0	X							200	25		X	100	
Phoenix.....	Union High School.....	E																							
Tombstone.....	High School.....	E						0			P. C. V.														
Tucson.....	do.....	E	54	54	54	54		X	1,100	N.		X	X	X	0	0	X	X	0	300	12	50	X	755	
ARKANSAS.																									
Berryville.....	High School.....	E	18	36	36	36					C. V.		X							0	300		0	100	
Camden.....	do.....	R	135	135	135	135		0			P. C. V.	0	X							0	0		X	0	
Carlisle.....	do.....	R	135	135	135	135		0												0	0			0	
Clarendon.....	do.....	R	18	18	18	18		0											X	0	0		X	5	

City	High School	Grades	Enrollment	Value	Property	Other	Notes
Dermott	do.	30-30	30	0	0	0	
Des Ar.	do.	45-45	45	0	0	0	
Dover	do.	30-30	30	0	0	0	
Fayetteville	do.	54-54	54	0	0	0	
Helena	do.	135-135	135	0	0	0	
Hot Springs	do.	48-48	48	0	0	0	
Jonesboro	State Agricultural School (1st dist.)	216-216	216	0	0	0	
Malvern	High School	60-60	60	0	0	0	
Mammoth Spring	do.	32-32	32	0	0	0	
Mena	do.	54-54	54	0	0	0	
Nashville	do.	54-54	54	0	0	0	
Pine Bluff	do.	54-54	54	0	0	0	
Do	Missouri Street High School (negro)	24-24	24	0	0	0	
Rogers	High School	135-135	135	0	0	0	
Strong	do.	50-50	50	0	0	0	
Stuttgart	do.	40-40	40	0	0	0	
CALIFORNIA.							
Altamira	High School	270-270	270	0	0	0	
Alturas	Modoc County High School	150-150	150	0	0	0	
Anahelm	Union High School	180-180	180	0	0	0	
Antloch	Riverview Union High School	180-180	180	0	0	0	
Arbun	Placer County High School	270-270	270	0	0	0	
Bakersfield	do.	190-190	190	0	0	0	
Benicia	do.	120-120	120	0	0	0	
Brentwood	do.	270-270	270	0	0	0	
Burbank	do.	120-120	120	0	0	0	
Campbell	do.	240-240	240	0	0	0	
Centerville	do.	135-135	135	0	0	0	
Chico	High School	133-133	133	0	0	0	
Chico	do.	81-81	81	0	0	0	
Cloverdale	Union High School	135-135	135	0	0	0	
Clovis	do.	135-135	135	0	0	0	
Coalinga	do.	180-180	180	0	0	0	
Colton	High School	135-135	135	0	0	0	
Colusa	do.	135-135	135	0	0	0	
Concord	Mount Diablo Union High	133-133	133	0	0	0	
Corning	do.	240-240	240	0	0	0	
Corona	do.	132-132	132	0	0	0	
Covina	do.	101-101	101	0	0	0	
Crescent City	do.	53-53	53	0	0	0	
Crockett	do.	135-135	135	0	0	0	
Dixon	do.	48-48	48	0	0	0	
El Centro	Central Union High School	113-113	113	0	0	0	
El Monte	Union High School	144-144	144	0	0	0	
Elmore	do.	60-60	60	0	0	0	
Esposito	do.	150-150	150	0	0	0	

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
CALIFORNIA—con.																									
Etna Mills.....	Etna Union High School.....	E	133	133	200	200	X	0	\$1,200	A.	P. C. V.	X	X	X	X	X	X	X	X	\$50	50	0	X	\$60	
Exeter.....	Union High School.....	E	180	180	180	180	X	0	1,500	.....	P. C. V.	X	X	X	X	X	X	X	X	200	20	0	X	0
Fairfield.....	Armijo Union High School.....	E	240	240	180	180	X	0	1,250	.....	P. C. V.	X	X	X	X	X	X	X	X	500	50	0	X	100
Fort Bragg.....	Union High School.....	R, E	180	180	180	180	X	0	1,000	.....	P. C. V.	X	X	X	X	X	X	X	X	300	36	0	X	25
Fortuna.....	High School.....	E	180	180	180	180	X	0	1,000	A.	P. C.	X	X	X	X	X	X	X	X	350	11	0	X	400	
Fowler.....	Union High School.....	E	180	180	180	360	X	0	1,400	A. N.	P. C.	X	X	X	X	X	X	X	X	2,000	50	\$300	X	200	
Fresno.....	High School.....	R, E	360	360	360	360	X, 3	0	1,100	.....	P. C. V.	X	X	X	X	X	X	X	X	1,000	20	150	X	210
Fullerton.....	Union High School.....	E	150	150	150	135	X	0	1,500	A.	P. C. V.	X	X	X	X	X	X	X	X	280	12	900	X	350	
Gardena.....	Agricultural High School.....	R, E	135	135	135	135	X	0	1,200	.....	P. C. V.	X	X	X	X	X	X	X	X	500	94	0	X	20
Gilroy.....	High School.....	E	144	144	180	180	X	0	1,000	A. N.	P. C. V.	X	X	X	X	X	X	X	X	150	50	0	X	250	
Glendale.....	Union High School.....	R, E	180	180	180	180	X	0	950	A.	P. C.	X	X	X	X	X	X	X	X	250	19	100	X	75	
Gridley.....	do.....	R, 2	53	53	53	53	X	0	1,320	A.	P. C. V.	X	X	X	X	X	X	X	X	100	12	20	X	150	
Hanford.....	do.....	E	135	135	135	270	X	0	1,100	A.	P. C. V.	X	X	X	X	X	X	X	X	250	12	20	X	150	
Hayward.....	do.....	E	120	120	120	120	X	0	1,200	.....	P. C. V.	X	X	X	X	X	X	X	X	300	0	25	X	15
Healdsburg.....	High School.....	E	120	120	120	240	X	0	1,350	A.	P. C. V.	X	X	X	X	X	X	X	X	150	18	30	X	10	
Hollister.....	San Benito County High School.	E	108	108	108	108	X, 2	X	{1,350 1,550}	A. N.	P. C. V.	X	X	X	X	X	X	X	X	300	100	100	X	200	
Holtville.....	Union High School.....	E	180	180	180	180	X	0	1,180	A.	P. C. V.	X	X	X	X	X	X	X	X	150	20	100	X	100	
Huntington Beach.....	do.....	E	360	360	360	360	X	0	1,350	.....	P. C. V.	X	X	X	X	X	X	X	X	200	10	200	X	100
Imperial.....	Imperial Valley Union High School.	E	135	135	135	135	X	0	{1,350 1,550}	A. N.	P. C. V.	X	X	X	X	X	X	X	X	200	10	200	X	15	
Inglewood.....	Union High School.....	E	135	135	135	135	X	0	1,000	.....	P. C.	X	X	X	X	X	X	X	X	150	10	200	X	125
Long.....	do.....	E	40	40	40	40	X	0	1,000	A.	P. C.	X	X	X	X	X	X	X	X	100	5	0	X	125	
Kingsburg.....	do.....	E	135	135	135	135	X	0	1,000	.....	C. V.	X	X	X	X	X	X	X	X	200	10	200	X	100
Lakeport.....	Clear Lake Union High School.	E	40	40	40	40	X	0	1,000	.....	P. C.	X	X	X	X	X	X	X	X	150	10	200	X	15
Lincoln.....	Union High School.....	E	40	40	40	40	X	0	1,000	A.	P. C.	X	X	X	X	X	X	X	X	100	5	0	X	125	

[illegible]

Two in art schools, one in school of engineering.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
CALIFORNIA—con.																								
Richmond.	Union High School.	E	270	180	...	...	X	X	\$1,200	A.	P. C.	X	X	X	X	X	X	X	...	\$150	...	...	X	...
Riverside.	Girls' High School.	E	360	180	360	180	X	0	1,280	...	P. C.	X	X	X	X	0	0	0	...	600	70	0	X	\$500
Sacramento.	High School.	E	240	240	240	...	X	0	1,580	A.	P. C.	X	X	X	X	0	0	0	...	500	25	...	X	200
St. Helena.	Union High School.	R	135	135	135	...	0	0	...	...	P. C.	X	X	X	X	0	0	0	...	150	20	\$75	X	150
Salinas.	High School.	E	270	135	...	...	X	X	1,250	A. N.	P. C. V.	X	X	X	X	X	0	0	...	220	15	0	X	75
San Bernardino.	do.	E	135	135	135	...	X	0	1,200	A. N.	P. V.	X	X	X	X	0	0	0	...	3,500	...	...	X	250
San Diego.	do.	R, E	240	240	240	...	X, 6	0	{1,300}	...	P. C. V.	X	X	X	X	...	...	...	...	...	...	...	X	250
San Fernando.	do.	R, E	270	...	135	...	X	0	1,600	...	P. C.	X	X	X	X	...	...	...	...	500	150	...	X	250
San Francisco.	Girls' High School.	E	135	135	135	...	X, 2	0	{1,680}	A.	C.	...	X	X	X	X	...	...	...	3,000	75	...	X	500
Do.	Lowell High School.	{R 1, E 2}	240	...	240	240	X	0	{1,500}	A.	C.	X	X	X	X	...	...	...	...	3,000	...	...	...	...
Do.	Mission High School.	E	150	150	150	150	X, 2	0	{2,040}	...	P. C. V.	...	X	...	X	X	...	...	...	250	12	200	X	75
Do.	Polytechnic High School.	R	54	108	54	108	X	0	{1,500}	...	P.	X	X	...	...	...	...	...	...	2,000	100	...	0	...
Sanger.	Union High School.	E	135	185	...	...	X	0	1,200	...	P. C. V.	X	X	X	X	...	...	...	...	...	...	...	0	...
San Jacinto.	High School.	E	216	216	216	216	X	0	...	...	C.	X	X	X	X	...	...	...	...	100	0	0	0	...
San Jose.	do.	E	...	270	270	135	X	0	1,500	A.	C. V.	...	...	X	X	X	...	...	...	500	...	...	...	...
San Luis Obispo.	California Polytechnic School.	R	360	180	180	...	X, 2	0	{1,200}	...	P. C. V.	X	X	X	X	0	0	...	...	800	25	0	X	150
San Mateo.	Union High School.	E	150	150	150	150	X	0	1,200	A. N.	P. C. V.	X	X	X	X	...	...	...	...	626	63	100	X	200
San Rafael.	High School.	E	135	135	...	...	X	X	660	A.	P. C. V.	X	X	X	X	0	X	X	...	...	50	...	X	80
Santa Ana.	do.	E	270	270	270	270	X	0	1,150	A. N.	P. C. V.	...	...	...	...	...	...	...	...	200	25	...	X	...
Santa Barbara.	do.	E	240	240	...	...	X	0	1,200	A.	P. C. V.	...	...	...	...	...	...	...	...	600	20	...	X	800
Santa Clara.	do.	E	180	160	...	200	X	0	600	A.	P. C. V.	...	...	...	...	...	...	...	...	125	13	...	X	120
Santa Cruz.	do.	E	120	120	180	180	X	0	945	A.	P. C. V.	...	...	...	...	...	...	...	...	200	...	100	X	250

Santa Maria.....	Union High School.....	R	135	135	267	270	270	270	135	0	1,300	A.	C.	X	X	X	0	1,500	30	1,700	X	.....
Santa Monica.....	Polytechnic High School.....	R, E	.....	.....	.....	.....	.....	.....	.....	X	{1,500}	A.	P. C. V.	X	X	X	0	.....	.....	.....	X	.....
Santa Paula.....	Union High School.....	E	.....	360	.....	.....	.....	.....	.....	0	0	A. N.	P. C.	X	X	X	X	100	.....	.....	X	.....
Sebastopol.....	Analy Union High School.....	E	270	270	270	270	270	270	270	0	0	A. N.	P. C.	X	X	X	X	200	0	.....	X	55
Selma.....	Union High School.....	E 3	270	270	270	270	270	270	270	0	0	A.	.....	X	X	X	X	100	6	40	X	.....
Sonoma.....	Sonoma Valley Union High School.....	E	135	.....	.....	.....	.....	.....	.....	0	0	.....	.....	X	X	X	X	.....	.....	.....	X	300
South Pasadena.....	High School.....	E	267	267	.....	.....	.....	.....	.....	0	0	N.	C.	X	X	X	X	500	30	.....	X	300
Stockton.....	do.....	E	270	270	.....	.....	.....	.....	.....	0	0	A.	P. C.	X	X	X	X	150	0	35	X	400
Susanville.....	Lassen County High School.....	E	.....	53	.....	.....	.....	.....	.....	0	0	.....	P. C.	X	X	X	X	50	.....	.....	X	10
Tulare.....	High School.....	E	120	120	0	0	0	0	0	X	0	A. N.	.....	X	X	X	X	300	10	200	X	500
Turlock.....	Union High School.....	E	202	202	202	202	202	202	202	0	0	A.	P. C.	X	X	X	X	150	40	0	X	100
Ukiah.....	High School.....	E	135	135	135	135	135	135	135	0	0	A.	P. C.	X	X	X	X	300	14	0	X	40
Ventura.....	Union High School.....	R, E	0	240	240	240	240	240	240	0	0	.....	.....	X	X	X	X	600	30	250	X	350
Vsalia.....	High School.....	E	135	135	.....	.....	.....	.....	.....	0	0	N.	P. C. V.	X	X	X	X	.....	20	50	X	.....
Watsonville.....	do.....	E	60	60	60	60	60	60	60	0	0	A.	P. C.	X	X	X	X	1,000	100	500	X	500
Whittier.....	Union High School.....	E	270	270	270	270	270	270	270	0	0	A.	P. C.	X	X	X	X	1,000	50	.....	X	500
Willits.....	do.....	E	60	60	.....	.....	.....	.....	.....	0	0	A.	P. C. V.	X	X	X	X	200	.....	.....	X	50
Willow.....	Glenn County High School.....	E	.....	.....	.....	.....	.....	.....	.....	0	0	.....	P.	X	X	X	200	.....	.....	.....	X	.....
Yreka.....	Siskiyou County High School.....	R	270	.....	.....	.....	.....	.....	.....	0	0	A.	P. C.	X	X	X	300	24	.....	.....	X	450
COLORADO.																						
Arvada.....	High School.....	R	36	36	36	36	36	36	36	X	.....	A.	P. C.	X	X	X	X	250	25	50	X	200
Aspen.....	do.....	E	36	65	80	80	80	80	80	0	0	.....	P. C.	X	X	X	X	28	.....	.....	X	350
Boulder.....	State Preparatory School.....	R	54	54	.....	.....	.....	.....	.....	0	0	A.	P. C.	X	X	X	X	25	30	.....	X	75
Brighton.....	High School.....	.....	60	60	60	60	60	60	60	0	0	.....	P. C.	X	X	X	X	.....	.....	.....	X	200
Buena Vista.....	do.....	R	72	72	72	72	72	72	72	X	0	N.	P. C.	X	X	X	X	150	25	.....	X	25
Cheyenne Wells.....	Cheyenne County High School.....	R	27	27	0	0	0	0	0	0	0	.....	P. C. V.	X	X	X	X	.....	10	.....	X	.....
Colorado Springs.....	High School.....	E	360	360	.....	.....	.....	.....	.....	0	0	A.	P. C. V.	X	X	X	X	500	60	.....	X	300
Cortez.....	do.....	E	.....	135	135	135	135	135	135	0	0	.....	P.	X	X	X	X	.....	50	.....	X	.....
Cripple Creek.....	do.....	R	240	120	0	0	0	0	0	X	0	.....	.....	X	X	X	X	10	.....	15	X	75
Del Norte.....	do.....	R	36	36	36	36	36	36	36	X	0	A.	P. C.	X	X	X	X	.....	.....	.....	X	.....
Denver.....	East Side High School.....	R, E	54	54	54	54	54	54	54	X, 4	0	{1,400-1,500}	A.	P. C.	X	X	X	4,000	72	.....	X	800
Do.....	{Longfellow Technical High School.....	R	270	.....	.....	.....	.....	.....	.....	X, 4	0	{1,100-1,500}	.....	P. C. V.	X	X	X	5,000	50	.....	X	500
Do.....	North Side High School.....		108	54	54	54	54	54	54	X	0	.....	.....	X	X	X	.....	.....	.....	.....	X	.....
Do.....	West Side High School.....		72	72	72	72	72	72	72	X	0	A.	P. C. V.	X	X	X	.....	.....	.....	.....	X	1,100
Durango.....	High School.....	E	101	.....	.....	.....	.....	.....	.....	X	0	{1,000-1,300}	.....	P. C. V.	X	X	X	.....	.....	.....	X	400
Eaton.....	B. H. Eaton High School.....	R	180	180	180	180	180	180	180	X	X	N.	P. C.	X	X	X	X	150	0	0	X	400
Florence.....	High School.....	R	72	72	.....	.....	.....	.....	.....	0	0	.....	P. C. V.	X	X	X	X	50	20	30	X	200
Fort Morgan.....	do.....	E	36	36	.....	.....	.....	.....	.....	0	0	.....	P. V.	X	X	X	X	200	20	500	X	200
Fountain.....	do.....	R	56	56	56	56	56	56	56	X	0	N.	P. C.	X	X	X	X	25	0	.....	X	250
Fowler.....	do.....	R	60	60	60	60	60	60	60	X	0	N.	P. C.	X	X	X	X	.....	.....	.....	X	150
Gunnison.....	do.....	R	135	135	.....	.....	.....	.....	.....	X	0	A.	C. V.	X	X	X	X	300	50	150	X	200
Hayden.....	Gunnison County High School.....	E	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....	X	X	X	.....	.....	.....	.....	X	225
Henderson (R. D. 1).....	High School.....	E	72	72	.....	.....	.....	.....	.....	0	0	.....	.....	X	X	X	.....	.....	.....	.....	X	30
Hotchkiss.....	Union High School.....	E	75	90	90	90	90	90	90	0	0	.....	P.	X	X	X	X	10	.....	.....	X	.....
Julesburg.....	High School.....	R	48	48	48	48	48	48	48	X	0	A.	P. C.	X	X	X	X	150	20	150	X	25
	Sedgwick County High School.....	R 2	.....	.....	.....	.....	.....	.....	.....	0	0	.....	P. C.	X	X	X	X	.....	.....	.....	X	.....

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
													School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.	
			First year.	Second year.	Third year.	Fourth year.																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
COLORADO—con.																									
Lafayette.....	High School.....	R	72	36	36	36	0	0	\$765	A.	P. V.	0	X	0	0	0	0	X	X	\$75	0	0	X	\$100	
La Junta.....	do.....	E	36	36	36	36	X	X	720	A.	P. C. V.	X	X	0	0	0	0	X	X	150	0	\$400	X	300	
Lamar.....	Union High School.....	E	54	54	60	60	X	X	1,080	A. N.	P. C.	X	X	0	0	0	0	X	0	200	14	0	X	300	
Leadville.....	High School.....	E	24	48	...	...	X	X	350	A. N.	P.	X	X	0	0	0	0	0	0	30	25	100	X	190
Littleton.....	do.....	R	72	72	...	...	X, 2	X	{ 855 }	A.	P. C. V.	X	X	0	0	X	0	X	0	300	50	50	X	200
Longmont.....	do.....	R	27	27	27	27	X	X	855	A.	P. C. V.	0	X	0	0	0	0	0	0	150	0	150	X	600	
Louisville.....	do.....	R	54	54	54	54	X	X	945	N.	P. C.	X	X	0	0	0	0	0	0	0	40	150	X	35	
Loveland.....	do.....	E	36	36	...	...	X	X	360	N.	P.	0	X	0	0	0	0	0	0	300	0	0	X	10
Mancos.....	do.....	E	9	9	8	8	X	X	810	N.	P.	0	X	0	0	0	0	0	0	50	20	0	X	250	
Manzanola.....	Columbia High School.....	R	...	...	...	...	X	X	...	A.	P. C.	X	X	0	0	0	0	0	0	...	...	...	X	400
Monte Vista.....	High School.....	R	108	72	72	72	X, 2	X	{ 900 }	N.	P. C. V.	X	X	0	0	X	0	X	0	...	0	0	X	800	
Pueblo.....	Centennial High School.....	E	108	108	...	...	X	X	{ 1,500 }	N.	P. C. V.	X	X	0	0	0	0	0	0	0	0	0	X	350
Do.....	High School (Dist. No. 20).....	E	24	24	...	...	X	X	900	N.	P.	X	X	0	0	X	0	X	0	0	0	0	X	200
Salida.....	High School.....	R	45	45	45	45	0	0	850	N.	C.	X	X	0	0	0	0	0	0	...	...	...	X	500
Steamboat Springs.....	do.....	R	57	57	57	57	0	0	...	...	C. V.	X	X	0	0	0	0	0	0	200	25	25	X	10
Telluride.....	do.....	R	135	135	135	135	0	0	...	...	P. C. V.	X	X	0	0	X	0	0	0	50	0	0	X	300
Towner.....	do.....	R	48	48	0	0	X	0	900	A.	P. V.	X	X	0	0	0	0	0	0	200	0	0	X	...	
Trinidad.....	do.....	R	81	81	81	81	X	X	540	A.	P. C.	X	X	0	0	0	0	0	0	35	0	0	X	...	
Wray.....	Yuma County High School.....	{ R 1 E 3 }	...	...	...	...	X	X	...	A.	P. C.	X	X	0	0	0	0	0	0	...	...	...	X	...
CONNECTICUT.																									
Ansonia.....	High School.....	E	80	80	...	...	X	X	...	A.	P. C.	X	X	0	0	0	0	0	0	0	0	0	X	200
Bridgeport.....	do.....	R, E	54	54	54	54	X	X	900	A.	P. C.	X	X	0	0	0	0	0	0	300	0	0	X	500	
Bristol.....	do.....	E	60	60	60	60	X	X	800	A.	P. C.	X	X	0	0	0	0	0	0	...	...	...	X	...

City	School	Enrollment	Value	Property	Assessment	Rate	Other	Notes
Colchester	Bacon Academy	200	27	200	27	27	27	
Deep River	Union High School	200	27	200	27	27	27	
Guilford	Institute and High School	200	27	200	27	27	27	
Hartford	High School	54	135	135	135	135	135	
Middletown	do	120	120	120	120	120	120	
Milford	do	90	90	90	90	90	90	
Mystic	Academy	8	18	18	18	18	18	
Naugatuck	High School	54	54	54	54	54	54	
New Britain	do	160	160	160	160	160	160	
New Haven	do	108	108	108	108	108	108	
Portland	do	36	36	36	36	36	36	
Seymour	do	57	57	57	57	57	57	
Shelton	do	38	38	38	38	38	38	
South Manchester	do	27	27	27	27	27	27	
Stamford	do	33	33	33	33	33	33	
Stonington	do	80	27	27	27	27	27	
Stratford	do	27	27	27	27	27	27	
Wallingford	Central District High School	27	27	27	27	27	27	
Washington Depot	Washington High School	27	27	27	27	27	27	
Willimantic	Windham High School	27	27	27	27	27	27	
Windsor Locks	High School	36	36	36	36	36	36	
DELAWARE.								
Georgetown	High School	20	20	20	20	20	20	
Milford	do	36	36	36	36	36	36	
Millsboro	do	36	36	36	36	36	36	
Wilmington	Howard High School (negro)	48	48	48	48	48	48	
DIST. COLUMBIA.								
Washington	Business High School	27	27	27	27	27	27	
Do.	Central High School	36	36	36	36	36	36	
Do.	Eastern High School	72	72	72	72	72	72	
Do.	McKinley Manual Training High School	54	54	54	54	54	54	
Do.	M Street High School (negro)	36	36	36	36	36	36	
Do.	Western High School	27	27	27	27	27	27	

Three in art; two in normal.

Art schools and colleges.

1 Two in art schools.

[illegible]

Caitlin.....	do.....	R	18	18	18	18	0	0		P. C.	X							50	40		X	25
Cedarville.....	do.....		18	20	20	4	0	0										0	250	70	X	20
Cerro Gordo.....	do.....	R	60	60	60	45	0	0		P.								0	0		X	
Chaplin.....	do.....	R	20	20	20	20	0	0											0			
Chicago.....	Bowen High School.....	R, E					X, 4	0	{1, 080}	(1)	X	X	X	X	X	X	X	15	50		X	15
Do.....	Calumet High School.....	R, E					X	0	0	A.	X	X	X	X	X	X	X	3, 000	100		X	
Do.....	Carl Schurz High School.....	R, E					X	0	0	A. N.	X	X	X	X	X	X	X	5, 000	0	0	0	
Do.....	Crane Technical High School.....	R	160	160	160	160	X	0	0		X	X	X	X	X	X	X	10, 000	100	10, 000	X	1, 000
Do.....	Curtis(Geo. Wm.) High School.....	R, E	80	80	80	80	X	X	1, 700		X	X	X	X	X	X	X	1, 000	0	40	X	40
Do.....	Lake High School.....	R	67	67	134	134	X, 4	0	{1, 100}	(2)	X	X	X	X	X	X	X		50	200	X	800
Do.....	Lane Technical High School.....	R					X	0	{1, 600}	A. N.,	X	0	0	0	0	0	0	10, 000	45		X	750
Do.....	Marshall High School.....	R, E					X	0	{1, 600}	A. N.	X	X	X	X	X	X	X	1	25	4, 000	X	
Do.....	Murray F. Tuley High School.....	E	80	80	160	160	X	0	{1, 300}		X							2, 000	100		0	
Do.....	Waller High School.....	{E 2}	80	80	80	80	X	0	{1, 000}	A.	X	0	0	0	0	0	0		10		X	
Do.....	William McKinley High School.....	{R 2}	80	80	160	160	X, 2	0	{1, 600}	A. N.	X							1, 400	6		X	50
Chicago Heights.....	Bloom Township High School.....	E					0	0	0		X							300			X	250
Chillicothe.....	Chillicothe Township High School.....	R	36	36	36	36	0	0	0		0							0	0	10	X	50
Cicero.....	J. Sterling Morton High School.....	{R 1}	60				X	0	1, 200	A.	X							400	75	100	X	150
Clinton.....	High School.....	{E 3}	360	360				0	0		X							400			X	200
Cobden.....	do.....	E	0	120	120		X	0	675	N.	0	0	0	0	0	0	0	250	100	250	X	150
Cooksville.....	do.....	E	24	36	36	48	0	0	0		0	0	0	0	0	0	0				X	
Cropsey.....	do.....	E	68	68	68	68	0	0	0		X										X	30
Decatur.....	do.....	R					X, 2	0	{690}		X	X	X	X	X	X	X	500	20		X	
De Kalb.....	De Kalb Township High School.....	E	190	190	190		X	0	{810}		X	X	X	X	X	X	X	500	25	100	X	600
De Land.....	High School.....	R	30	30	30	30	0	0	1, 000	A.	X											
Des Plaines.....	Maine Township High School.....	E	267					0	0		0											
Dixon.....	North Dixon High School.....	E	26	26			X	X	248		X	X	X	X	X	X	X	150				
Downers Grove.....	High School.....	E					0	0	0		X	0	0	0	0	0	0		50	250	X	300
Dunlap.....	do.....		30	45	30	20	0	0	0		0	0	0	0	0	0	0	0	0	0	0	
East Moline.....	do.....	E	36	36	36	36	X	X	300	A.								300	0	0	0	
East Peoria.....	do.....	R	18	18	18	18	X	X	540	A.	0								0	0	0	
East St. Louis.....	do.....	E					X	0	900	A.	X							150	0	50	X	250
Do.....	Lincoln Polytechnic High School (negro).....	E	150	150	150	150	X	0	540		X	X	X	X	X	X	X	200	8		X	
Effingham.....	High School.....	E					0	0	0		0							175	20		X	200
Elgin.....	do.....	E					X	X	800	A.	0	X	X	X	X	X	0	500	0		X	500
Ellsworth.....	do.....	E	90	90	90	90	0	0	0		0	X									X	20
Evanston.....	{Evanston Township High School.....	R					X, 3	0	{1, 400}	(3)	X											
Fairbury.....	High School.....	E	48	48	48	48	X	X	{1, 425}		X											
Farmer City.....	Moore Township High School.....	R	90				X	X	{1, 500}	A.	X							300	20		X	600

1 Art schools and schools of engineering. 2 Art schools and schools of engineering. 3 1 in normal, 1 in art, and 1 in engineering school.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
ILLINOIS—contd.																								
Farmington.....	High School.....	E	54	54	54	54	X	X	\$500	A.	C.	0	X										X	\$150
Findlay.....	do.....	R	27	27	27	27	0	0			P.		X											20
Freeburg.....	do.....	E	42	27	27	27	0	0	540	N.	P.		X											75
Fulton.....	do.....	R	27	27	27	27	X	X		A.	P. C.	0	X							0	15		X	150
Galva.....	do.....	E	27	27	27	27	0	0			P. C.		0							0	20		X	200
Gardner.....	do.....		18	18	18	24	0	0			P.		X							0			X	30
Garrett.....	do.....	R	54	54	54	54	0	0					X							0			X	200
Geneseo.....	Geneseo Township High School		72	108	108	108	0	0					X							25			X	200
Geneva.....	High School.....	E	108	108	108	108	0	0	1,100		P. V.									300	0		X	125
Gibson City.....	Drummer Township High School.	R					X	0												0	0			0
Gifford.....	High School.....	R	60	60	60	60	0	0			C.	0	X							0			X	25
Gladstone.....	do.....	E	0	0	36	36	0	0				0	X										X	250
Gridley.....	do.....	R					0	0	405	A.	P.	0											X	
Harvey.....	Thornton Township High School.	E	72	72			X	0			C.	X	X							200			X	
Highland Park.....	Deerfield Township High School.	E				54	X	0	450	A. N.	P. C.	X								150			X	750
Hindsboro.....	Union High School.....	E	112	112	112	112	0	0			P. C. V.	0	X							0	30		X	600
Hoopeston.....	High School.....	E	40	50	50	60	X	0	585	A.	P. C. V.	X	X							200			X	50
Hopedale.....	do.....	R	54	54	54	54	0	0			P. C.	0											X	50
Huntley.....	do.....	R	36	36	36	36	0	0			P. C.	0								20	0		X	350
Jacksonville.....	do.....	E	54	54	54	54	X	0	900	A.	P. C. V.	X	X							35			X	5,000
Joliet.....	Joliet Township High School.	E	54	54	27	27	0	0	1,000	A.	P. C. V.	X	X							1,300		210	X	
Kaneville.....	High School.....	E	70	70	70		0	0			P.									180	0		X	
Kankakee.....	do.....	E	57	57	57	57	X	0	810	A.	P. C.	X	X										X	
Kewanee.....	do.....	E	135	135	135	135	0	0			P. C.	X	X								1		X	500

[illegible]

City	School	Grades	Enrollment	Value	Land	Water	Buildings	Other	Notes
Washburn	do	1-12	100	100	0	0	0	0	
Waukegan	Waukegan Township High School	10-12	100	100	0	0	0	0	
Wenona	do	1-12	100	100	0	0	0	0	
Williamsville	High School	1-12	100	100	0	0	0	0	
Winnebago	do	1-12	100	100	0	0	0	0	
Woodstock	do	1-12	100	100	0	0	0	0	
Wyandot	do	1-12	100	100	0	0	0	0	
Wyoming	do	1-12	100	100	0	0	0	0	
Yorkville	do	1-12	100	100	0	0	0	0	
INDIANA									
Acton	High School	1-12	100	100	0	0	0	0	
Advance	do	1-12	100	100	0	0	0	0	
Akron	do	1-12	100	100	0	0	0	0	
Alamo	do	1-12	100	100	0	0	0	0	
Albion	do	1-12	100	100	0	0	0	0	
Alexandria	do	1-12	100	100	0	0	0	0	
Amo	do	1-12	100	100	0	0	0	0	
Andrews	do	1-12	100	100	0	0	0	0	
Arcadia	do	1-12	100	100	0	0	0	0	
Arcadia (R. F. D.)	do	1-12	100	100	0	0	0	0	
Argos	Walnut Grove High School	1-12	100	100	0	0	0	0	
Arlington	High School	1-12	100	100	0	0	0	0	
Atlanta	do	1-12	100	100	0	0	0	0	
Attica	do	1-12	100	100	0	0	0	0	
Aurora	do	1-12	100	100	0	0	0	0	
Avilla	do	1-12	100	100	0	0	0	0	
Bedford	do	1-12	100	100	0	0	0	0	
Bicknell	do	1-12	100	100	0	0	0	0	
Blippus	do	1-12	100	100	0	0	0	0	
Birdseye	do	1-12	100	100	0	0	0	0	
Bloomfield	do	1-12	100	100	0	0	0	0	
Bloomington	do	1-12	100	100	0	0	0	0	
Bluffton	do	1-12	100	100	0	0	0	0	
Bourbon	do	1-12	100	100	0	0	0	0	
Brazil	do	1-12	100	100	0	0	0	0	
Bridgeton	do	1-12	100	100	0	0	0	0	
Bringinghurst	do	1-12	100	100	0	0	0	0	
Brook	do	1-12	100	100	0	0	0	0	
Brooklyn	do	1-12	100	100	0	0	0	0	
Brookville	do	1-12	100	100	0	0	0	0	
Brownstown	do	1-12	100	100	0	0	0	0	
Bruceville	do	1-12	100	100	0	0	0	0	
Bryant	do	1-12	100	100	0	0	0	0	
Buck Creek	do	1-12	100	100	0	0	0	0	
Burlington	do	1-12	100	100	0	0	0	0	
Burnetts Creek	do	1-12	100	100	0	0	0	0	
Burnettsville High School	do	1-12	100	100	0	0	0	0	
Butler	High School	1-12	100	100	0	0	0	0	
Butlerville	do	1-12	100	100	0	0	0	0	

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
INDIANA—contd.																										
Cadiz.....	High School.....	R	24	24	24	24	X	X	\$630	N.	P. C.		X			X	X	X			4					
Cannelburg.....	do.....	R	27	27	27	27	X	X	675		P. C.		X				X				50	\$100	X			
Carthage.....	do.....	R	54	54			X	X	585	A.	C.		X										X	\$50		
Castleton.....	do.....	R	48	48	48	48	X	X	720	A.	C.		X							\$50	10	75	X	200		
Cayuga.....	do.....	R 2	27	27			X	X		A. N.	C.		X										X			
Centerville.....	do.....	R	36	36			X	X		A.	C.												X			
Chesterton.....	do.....	R	24	24			X	X			C.		X										X			
Churubusco.....	do.....	R	21	21			X	X			V.		X										X			
Cicero.....	do.....	R	24	24	24	24	X	X	540	A.	C.		X										X	50		
Clay City.....	do.....	R	54	54			X	X	675	A. N.	P. C.		X							20			X			
Claypool.....	do.....	R	21	21	21	21	X	X			P. C.		X										X			
Clinton.....	do.....	R	72	72	72	72	X	X	900	N.	P. V.		X								125	0	X	25		
Cloverdale.....	do.....	E	24	24	24	24	X	X	200	A. N.	C.		X							35			X	15		
Coesse.....	do.....	R	36	36	36	36	X	X			C.		X							0			X	150		
Colfax.....	do.....	E	36	36	36	36	X	X			P.		X					X	X	0			X	50		
Columbia City.....	do.....	R	72	72	72	72	X	X			P. C.		X							0			X	350		
Columbia City (R. F. D. No. 5.)	Jefferson Center High School.....	R	24	24	24	24	X	X			P.		X								15		X			
Columbus.....	High School.....	{ R 1 E 3	108		360		X	0	1,000	A.	P. V.		X					X	X	150	50	40	X	800		
Connersville.....	do.....	E	48	48			X	X	945	N.	C.		X							50			X	500		
Cortland.....	do.....	R	36	36	36	36	X	0			C.												X	25		
Cory.....	do.....	R	36	36	36	36	X	0			C.												X	10		
Corydon.....	do.....	R	54				X	X	630	N.	P. C.		X										X	40		
Cowan.....	do.....	R	44	44	44	44	X	X			P. C.		X										X			
Crawfordsville.....	do.....	E	60	60	60	60	X	X			P. C.		X								20		X			
Crawfordsville (R. F. D. No. 3.)	Breaks High School.....	R	36	36	36	36	X	0			C.									100	0		X	500		

[illegible]

Several.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
INDIANA—contd.																									
Greenwood.....	Center Grove High School.....	R	36	36	36	36	X	X	\$630	N.	P. C.	0	0	0	0	0	0	0	0	.....	2	.....	0	\$25
Do.....	Clark Township High School.....	R	19	19	19	19	X	X	540	N.	P. C. V.	0	X	X	X	X	X	X	X	\$100	6	.....	X	.....
Grovertown.....	High School.....	R	50	50	50	50	X	X	.....	.....	.....	0	X	X	X	X	X	X	X	.....	5	\$25	X	.....
Hagerstown.....	do.....	R	32	32	0	0	0	0	.....	.....	P.	0	0	0	0	0	0	0	0	.....	0	.....	X	100
Hamilton.....	Otsego Township High School.....	R	24	24	24	24	X	X	128	.....	C.	0	0	0	0	0	0	0	0	.....	0	.....	X	10
Hammond.....	High School.....	E	144	144	.....	.....	X	X	1,100	.....	V.	0	0	0	0	0	0	0	0	200	50	.....	X	1,000
Hanna.....	do.....	R	18	18	18	27	X	X	540	N.	P.	0	0	0	0	0	0	0	0	.....	0	.....	X	30
Harlan.....	do.....	E	24	24	24	24	X	X	.....	.....	V.	0	0	0	0	0	0	0	0	10	4	.....	X	30
Hartford City.....	do.....	E	48	48	48	.....	X	X	675	N.	P. C.	0	0	0	0	0	0	0	0	150	0	.....	X	200
Haubstadt.....	do.....	R	24	24	24	24	X	X	.....	A. N.	.....	0	0	0	0	0	0	0	0	.....	0	.....	X	20
Hillsboro.....	do.....	R	32	32	32	32	X	X	614	.....	.....	0	0	0	0	0	0	0	0	.....	0	.....	X	50
Hobart.....	Hobart Township High School.....	E	72	72	0	0	0	0	.....	.....	C.	0	0	0	0	0	0	0	0	.....	0	.....	0	.....
Holland.....	High School.....	R	28	28	28	28	0	0	.....	.....	P.	0	0	0	0	0	0	0	0	.....	0	.....	0	.....
Holton.....	do.....	R	.....	.....	.....	.....	0	0	.....	.....	.....	0	0	0	0	0	0	0	0	.....	0	.....	0	.....
Hope.....	do.....	R	24	24	12	.....	0	0	.....	.....	P.	0	0	0	0	0	0	0	0	4	8	.....	0	.....
Howe.....	Lima Consolidated High School.....	R 1)	24	24	24	24	X	X	630	A.	C.	0	0	0	0	0	0	0	0	20	15	.....	X	10
Hudson.....	High School.....	E 3)	24	24	24	24	X	X	108	N.	P. C.	0	0	0	0	0	0	0	0	.....	0	.....	X	.....
Huntingburg.....	do.....	R	72	72	72	72	0	0	.....	.....	.....	0	0	0	0	0	0	0	0	.....	0	.....	X	100
Huntington.....	do.....	E	48	48	48	48	X	X	810	N.	P. C.	0	0	0	0	0	0	0	0	75	.....	X	900	
Huntington (R. F. D. No. 3).....	Union Center High School.....	R	20	20	20	20	X	0	198	A. N.	P. C.	0	0	0	0	0	0	0	0	5	0	.....	X	10
Hymersa.....	High School.....	R	24	24	24	24	X	X	675	N.	P.	0	0	0	0	0	0	0	0	0	0	.....	X	.....
Idaville.....	do.....	R	81	81	27	27	0	0	.....	.....	P.	0	0	0	0	0	0	0	0	25	.....	X	25	
Indianapolis.....	Manual Training High School.....	E	54	54	54	54	X	0	1,100	A.	P. C. V.	0	0	0	0	0	0	0	0	3,000	100	.....	X	300
Do.....	Shortridge High School.....	E	270	270	270	270	X	0	{ 900 1,200 }	.....	C. V.	0	0	0	0	0	0	0	0	1,000	.....	X	3,500	
Inwood.....	High School.....	R	36	36	36	36	X	X	1,135	A. N.	P. C.	0	0	0	0	0	0	0	0	10	0	.....	X	50

Location	High School	Elementary	Intermediate	Junior High	Senior High	Other	Notes
Jamestown	do	32	32	32	32	32	R
Jasper	do	36	36	36	36	36	R
Jeffersonville	do	36	36	36	36	36	R
Kempton	do	24	24	24	24	24	R
Kewanna	do	24	24	24	24	24	E
Keystone	do	22	22	22	25	25	R
Kingsbury	do	48	48	48	48	48	R
Kokomo	do	24	24	24	24	24	E
Lacrosse	Dewey Township High School	36	36	36	36	36	R
Ladoga	High School	72	72	72	72	72	E
La Fayette (R. F. D. No. 8)	Wea Township High School	27	27	27	27	27	R
La Fontaine	High School	27	27	27	27	27	R
La Grange	do	27	27	27	27	27	R
La Grange (R. F. D. No. 1)	Woodruff High School	24	24	24	24	24	E
Lake	Richland City High School	32	32	32	32	32	R
Laketon	High School	21	21	21	21	21	R
Lakeville	do	24	24	24	24	24	R
Laotto	do	27	27	27	27	27	R
Lapaz	do	26	26	26	26	26	R
La Porte	do	54	54	54	54	54	E
Lawrence	do	27	27	27	27	27	R
Lawrenceburg	do	40	40	40	40	40	E
Lebanon	do	27	27	27	27	27	E
Leiters Ford	do	27	27	27	27	27	E
Liberty (R. F. D. No. 2)	Lotus High School	54	54	54	54	54	E
Linden	High School	27	27	27	27	27	E
Linton	do	24	24	24	24	24	R
Liston	do	36	36	36	36	36	R
Loogootee	do	72	72	72	72	72	R
Losantville	do	54	54	54	54	54	{R 2 E 2}
Lowell	do	28	28	28	28	28	R
McCordsville	do	42	42	42	42	42	R
Mace	do	72	72	72	72	72	R
Madison	Broadway High School (negro)	36	36	36	36	36	R
Do	High School	24	24	24	24	24	E
Manilla	do	90	90	90	90	90	R
Marengo	do	36	36	36	36	36	R
Marshall	do	21	21	21	21	21	R
Martinsville	do	24	24	24	24	24	E
Mauckport	do	16	16	16	16	16	R
Mecca	do	21	21	21	21	21	R
Medora	do	24	24	24	24	24	E
Mellott	do	108	108	108	108	108	R
Mentone	do	108	108	108	108	108	R
Michigan City	do	108	108	108	108	108	E

1 Several.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
INDIANA—contd.																								
Michigan City (R. F. D. No. 2).	Waterford High School.	E	36	36	36	36		0			P.												X	\$20
Michigan town.	High School.	R	36	36	36	36	X	0	\$450	N.	C.									0	0	0	X	100
Millford.	do.	R	50	50	50	55		0			C.													
Milltown.	do.																							
Milroy.	do.	R	24	24	24	24	X	X	480	A.	C.		X											
Milroy (R. F. D. No. 16).	Moscow High School.	R	28	28	28	28	X	X	720	N.	C.		X							\$25	10	\$35	0	
Mishawaka.	High School.	E	120	120	120	120	X	X	765	A. N.	P. C. V.		X	X						100			X	150
Mitchell.	do.	R	36	36	0	0	X	X	810	A. N.	P. C.		X							250			X	200
Mongo.	do.	R, E						0			P.												X	25
Monon.	do.		40	40				0			C.													
Montesuma.	do.	R	10	13	13	13			518	A. N.	C.									60				
Montmorenci.	do.	R	32	32	32	32	X	X	720	N.	C. V.		X										X	100
Montpelier.	do.	E	135				X	X	675	N.	P. C.		X										X	200
Mooney.	Clearspring High School.	R	27	27	27	27		0												0				
Mooreland.	High School.	R	21	21	21	21	X	X		N.	P.		X							15				
Mooreville.	do.	R	42	42	42	42	X	X	720	A. N.	P. C. V.		X							0				
Morgantown.	do.	R	42	42	42	42	X	X	800	A.	P.		X							25	10		X	300
Morocco.	do.	R	27					0			P.		X							100			X	40
Morristown.	do.	R	36	36	36	36	X	X	1,035	A.	C.		X							50			X	30
Mount Summit.	do.	R	27	27	27	27	X	X	675		P.		X							150	20	125	X	100
Mount Vernon.	do.	R	27	27			X	X	720	A.	P. C. V.		X							10	0	0	X	10
Nashville.	do.	R	42				X	X		A. N.	P. C. V.		X							25	14		X	
Newburg.	do.	R	18	18			X	X	630		P. C.		X										X	
Newcastle.	do.	E					X	X	900	A.	P. C.		X										X	
New Harmony.	do.	E	72	72	72	72	X	X	630		P. C.		X							50	20		X	150

[illegible]

DRAWING IN PUBLIC HIGH SCHOOLS.

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[illegible]

TABLE IV.—Drawing in public high schools—(continued).

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
INDIANA—con.																								
Winamac.....	High School.....	R	36	36	36	36	X	X	\$680	N.	P.	X	X	..	..	..	..	X	..	0	0	0	X	\$150
Wingate.....	do.....	{ R 2 E 2	54	54	..	..	X	X	675	A.	P. C.	0	X	X	..	..	..	X	X	\$15	20	..	X	120
Wolcottville.....	do.....	R	27	27	27	27	X	X	540	A.	P.	0	X	..	..	..	..	..	..	10	2	..	X	..
Worthington.....	do.....	R	..	24	..	..	X	X	625	..	C. V.	0	..	..	..	..	..	..	..	..	0	0	X	200
Young America.....	do.....	E	90	90	90	90	X	0	340	A.	C. V.	0	X	..	..	..	..	..	..	75	10	..	X	..
Zionsville.....	do.....	R	32	32	32	32	0	0	..	..	C.	0	X	..	..	..	..	..	..	25	3	\$10	X	50
IOWA.																								
Ackley.....	High School.....	E	135	135	135	135	X	0	..	N.	P. C. V.	X	X	..	..	..	X	..	..	25	9	50	X	75
Adel.....	do.....	R	60	60	75	75	..	0	..	..	..	0	X	..	..	..	..	..	..	0	0	0	X	50
Agency.....	do.....	E	..	..	..	..	..	0	..	..	V.	..	..	..	..	..	..	..	..	..	..	..	X	25
Albia.....	do.....	E 3	..	..	..	..	..	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	100
Alden.....	do.....	R	..	..	..	..	..	0	..	..	P.	0	..	..	..	..	..	..	..	..	..	..	X	150
Alvord.....	do.....	E	60	60	60	60	..	0	..	..	P. C. V.	..	X	..	..	..	..	..	..	10	0	..	X	25
Arthon.....	do.....	E	36	36	36	36	..	X	..	..	..	0	X	..	..	..	..	..	..	..	..	..	..	..
Arthur.....	do.....	R	..	..	..	..	..	..	..	..	P. C.	0	X	..	..	..	..	..	..	..	..	..	..	..
Bayard.....	do.....	R	18	18	54	54	..	..	..	..	..	0	X	..	..	..	..	..	..	..	..	..	..	..
Belmond.....	do.....	E	..	..	..	..	..	0	..	..	..	0	X	..	..	..	..	..	..	..	..	..	..	..
Blakesburg.....	Graded School.....	E	..	..	..	..	..	0	..	..	..	0	..	..	..	..	..	..	..	..	..	..	..	..
Blencoe.....	High School.....	E	54	54	54	..	..	0	..	..	P.	..	X	..	..	..	..	..	..	..	..	..	..	..
Bondurant.....	do.....	..	36	36	36	0	..	0	..	..	..	0	X	..	..	..	..	..	..	..	..	..	..	..
Boone.....	do.....	E	..	..	..	..	..	0	..	..	..	0	X	..	..	..	..	..	..	..	..	..	..	20
Burlington.....	do.....	E	..	..	..	..	..	0	..	..	C. V.	..	X	..	..	..	..	..	..	100	0	0	X	200
Carlton.....	do.....	R	72	..	..	..	..	X	..	..	P.	X	..	..	..	..	..	..	..	0	..	..	X	250
Clarksville.....	do.....	R	30	30	45	60	..	0	..	..	..	0	X	..	..	..	..	..	..	0	..	..	X	50

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
MAINE—continued.	Dixfield.....	{R 1 E 3}	36	36	36	36	0	X	P.	X	X	X	\$25	2	\$5	0
	Jordan High School.....		N.	P. C.	X	X	X	X	X
	High School.....		P. C.	X	X	\$240
	Portland.....	E	.....	.....	.....	81	X	0	450	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Do.....	E	0	0	135	135	X	0	1,400	.....	V.	.....	.....	.....	.....	.....	.....	.....	.....	500	0	.....	.....
	Rockland.....	E	54	54	54	54	X	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200	25	.....	.....
	St. Agatha.....	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Sanford.....	R	27	27	27	27	X	X	900	A.	.....	P. C.	.....	X	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Sangerville.....	R	18	18	18	18	X	X	600	A.	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lindsey High School.....	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Shapleigh.....	E	27	27	27	27	X	X	500	N.	.....	C.	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Skowhegan.....	E	54	54	54	54	X	X	360	A.	.....	P. C.	.....	X	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Thomaston.....	E	30	30	30	30	0	0	.....	.....	.....	P.	.....	X	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warren.....	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	P. V.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washburn.....	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	V.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waterville.....	E	36	36	36	36	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westbrook.....	E	72	72	72	72	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Paris.....	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winslow.....	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
MARYLAND.	Baltimore.....	{R 2 E 2}	60	60	60	60	X 2	0	{1,500 1,800}	A. N.	P. C.	X	X	1,800	125	1,200	0
	Do.....	R	144	144	108	144	X 6	0	{1,000 1,500}	(1)	P. V.	.....	X	X	0	0	0	X	0	9,000	.....	500	.....
	Do.....	R 2	72	72	72	72	X	0	1,200	V.	0	X	0	X	X	X	X	X	25	X

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
KANSAS—contd.																								
Galena.....	High school.....		27	54	54						P. C.	0		X				X					X	\$200
Galva.....	do.....							0			P. V.	0						X					X	60
Garden City.....	do.....	E						0			P. C.	0						X					X	15
Gas.....	do.....		45	60	60	60		X			P. C.	0	X	0	0	0	0	0					X	0
Goddard.....	do.....	R	45	45	45	45					P.	0											X	0
Goodland.....	Sherman County High School.....	E	108	108				0			P. V.												X	90
Great Bend.....	High School.....	E	180					0	\$630				X					X					X	100
Herington.....	do.....	E	60	60	75	90	X	X	608	A.	P. C. V.	0	X										X	400
Holton.....	do.....	E									P. C. V.	0	X										X	25
Hope.....	do.....	R						0															X	25
Humboldt.....	do.....	E	0	0	0																		X	0
Hutchinson.....	do.....	E	135	135	135		X	0	765	A.	P. C.	X						X					X	300
Independence.....	Montgomery County High School.....	R	48	48							V.	0											X	0
Junction City.....	High School.....	E					X	0	1,200	A. N.	P. V.							X					X	300
Kinsley.....	do.....	E									P.							X					X	40
Kirwin.....	do.....	E	45	45				X			C. V.	X	0						X				X	75
La Crosse.....	do.....	E	134	0	0	0		0			C. V.	X	X										X	50
La Harpe.....	do.....	E						0			V.							X					X	0
Leavenworth.....	do.....	E				24		0			P.		X					X					X	50
Lenora.....	do.....	E						0															X	15
Lucas.....	do.....	E						0															X	25
Lyons.....	do.....	E						0			C. V.							X					X	0
Maize.....	do.....	E	81		68		X	X	675	N.													X	150
Mankato.....	do.....	E						0			P.		X										X	100
Maple Hill.....	do.....	E	20	20	40	60		0					X										X	25
Mayetta.....	do.....	E	90	90	90	90	X	0					X										X	15
Meade.....	do.....	E	18	18	18	18		0			P. C.	X	X										X	25
Muscotah.....	do.....	R					X	0	535	A. N.			X						X				X	25

[illegible]

KENTUCKY.

Bedford.....	High School.....
Benton.....	Marshall County High School.....
Calhoun.....	McLean County High School.....
Corbin.....	High School.....
Covington.....	do.....
Crittenden.....	do.....
Cynthiana.....	do.....
Danville.....	Graded School.....
Earlington.....	do.....
Elisabethtown.....	Hardin County High School.....
Franklin.....	Graded and High School.....
Georgetown.....	High School.....
Harrodsburg.....	Graded School.....
Henderson.....	(Barret Manual Training High School.....
Hickman.....	High School.....
Hedgenville.....	Graded and High School.....
Junction City.....	do.....
La Center.....	Ballard County High School.....
La Grange.....	High School.....
Louisville.....	Central High School (negro).....
Do.....	Male High School.....
Do.....	Manual Training High School.....

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
KENTUCKY—Contd.																										
Mount Vernon	High School	R	15	15	15	15		X			P. V.	X	X	X	0	0	0	X	0	\$10	15	\$15	X	\$20		
Newport	do	E						0			P. V.	0						X				X		75		
Nicholasville	do	R						0			P. V.	0						X				X		25		
Owensboro	do	E	120	120	120	120	X	0	\$720	A.	P. C.	X	X					X		750			X	200		
Paducah	Lincoln High School (negro)	R					X	0			P. C.	X	X		X		0	X	X		10	0	X	500		
Paris	High School	R	25	25	33	33		0	600		V.		X			X		X		0	0		X	8		
Robard	Graded and High School	R					X	0			P. C. V.	X	X	X		X		X		200	75	100	X	175		
Somerset	High School	R	54	54	54	54		0	675		P. C.	X	X	0	0	X	0	X		25	6	12	X	25		
Sturgis	do	R						0			P. C.		X		0	X	0	X		500			X	200		
Winchester	do	E	90	90	60	60		0					X	X				X	0							
LOUISIANA.																										
Abbeville	High School	R	48	48	48	48	X	X	540	A.	P.	0	X					X		100			X	50		
Amite	do	R	48	48	48	48	X	X	585	A.	C.	0														
Arcadia	do	R	36	36	36	36	X	X	500	A.	P. C.	0	X					X	X	50	12		X	50		
Baton Rouge	do	R	54	54	54	54	X	X	675	A.	P.	0	X					X	X	35	25	100	X	75		
Bernice	do	R	54	54	54	54	X	X	540	N.		X	X		X				X	300	60	300	X	150		
Boyce	do	R	48	48	48	48	X	X	585	N.	P. C.	0	X				0		X				X			
Brusly	do	R	27	27	27	27	X	0			P. C.	0	X					X					X	50		
Bunkie	do	R	72	72	72	72	X	X	540		P. C. V.	0	X					X		0	0	0	X	150		
Cataro	Grand Prairie High School	R	60	60	75	75	X	X	540	A.	P. C. V.	0	X					X		0	0	0	X			
Cheneyville	High School	R	48	48	48	48	X	X	585	N.	P. C.	0	X							0	0	0	X			
Columbia	do	R	72	72	72	72	X	X	540	A. N.	P. C.	0	X							50			X			
De Ridder	do	R	54	54	54	54	X	X	675	A. N.	P. C.	0	X						X	10			X	50		
Donaldsonville	do	R	54	54	54	54	X	X	720	A.	P. V.	0	X										X			
Eros	do	R	120	120	135	150	X	0			P. V.	X	X						X				X			
Evergreen	do	R	72	72	72	72	X	X	675	A.	P. C.	X	X						X		15	0	X			

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
													School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.	
			First year.	Second year.	Third year.	Fourth year.																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
MAINE—continued.																									
Dixfield.....	High School.....	E 1	36	36	36	36	0	X			P.		X					X	X	\$25	2	\$5	0	...	
Lewiston.....	Jordan High School.....	{ E 2	76	76	76	76	X	X		N.	P. C.	X	X	0	X	0	0	X	0		0		X	...	
Madison.....	High School.....	E	54	54	54	54	X	X	\$240		P. C.										0		X	\$50	
Portland.....	Deering High School.....	E				81	X	0	450		P.									500	0		X	1,000	
Do.....	High School.....	E	0	0	135	135	X	0	1,400		V.			X				X	X	200	25		X	2,500	
Rockland.....	do.....	E	54	54	54	54	X	X				X									0		X	...	
St. Agatha.....	do.....	E					X	X		A.			X							0	0	0	X	...	
Sanford.....	do.....	E	27	27	27	27	X	X	900	A.	P. C.		X							25	0	0	X	350	
Sangerville.....	do.....	E	18	18	18	18	X	X	600	A.	P.		X			X					0	0	X	25	
Shapleigh.....	Lindsey High School.....	E					0	X															X	50	
Skowhegan.....	High School.....	E	27	27	27	27	X	X	500	N.	C. C.	X	X	0	X	0	0	X	0	20	12	100	X	100	
Thomaston.....	do.....	E	54	54	54	54	X	X	360	A.	P. C.		X						X	100	0	0	X	100	
Warren.....	do.....	E	30	30	30	30	0	0			P.		X							0	0			20	
Washburn.....	do.....	R					0	0																	
Waterville.....	do.....	R					0	0																	
Westbrook.....	do.....	E	36	36	36	36	0	X			P. V.	X	X	X	0	X	0	X	X	800	500	300	X	500	
West Paris.....	do.....	E	72	72	72	72	0	0			V.									500	0	0	0	...	
Winslow.....	do.....	R																						...	
MARYLAND.																									
Baltimore.....	Baltimore City College.....	{ R 2	60	60	60	60	X 2	0	{ 1,500	A. N.	P. C.		X						X	1,800	125	1,200	0	...	
Do.....	Baltimore Polytechnic Institute.	R	144	144	108	144	X 6	0	{ 1,000	{ 1,500	P. V.		X	X	0	0	0	X	0	9,000	...	500	...	...
Do.....	Eastern High School.....	R 2	72	72	72	72	X	0	1,200		V.	0	X	0	X	X	X	X	X	...	25	...	X	...	

Technical schools and universities.

TABLE IV.—Drawing in public high schools—(continued).

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
INDIANA—CON.																								
Winamac.....	High School.....	R	36	36	36	36	X	X	\$690	N.	P.	X	X					X		0	0	0	X	\$150
Wingate.....	do.....	{ R 2 E 2 }	54	54			X	X	675	A.	P. C.	0	X			X	X		X	\$15	20		X	120
Wolcottville.....	do.....	R	27	27	27	27	X	X	540	A.	P.	0	X							10	2		X	
Worthington.....	do.....	R		24			X	X	625		C. V.	0				0	0	0			0		X	200
Young America.....	do.....	E	90	90	90	90	X	0	340	A.	C. V.	0	X						X	75	10		X	
Zionsville.....	do.....	R	32	32	32	32	0	0			C.	0	X							25	3	\$10	X	50
IOWA.																								
Ackley.....	High School.....	E	135	135	135	135	X	0		N.	P. C. V.	X	X			X				25	9	50	X	75
Adel.....	do.....	E	60	60	75	75		0				0								0	0	0	X	50
Agency.....	do.....	E						0								0	0	0					X	25
Albia.....	do.....	E 3						0			V.		X						X				X	100
Alden.....	do.....	R						0			P.	0											X	150
Alvord.....	do.....	E	60	60	60	60		0			P.		X							10	0		X	25
Anthon.....	do.....	E	36	36	36	36		0			P. C. V.	0	X						X					
Arthur.....	do.....	R						0					X											
Bayard.....	do.....	R	18	18	54	54		0			P. C.	0	X										X	
Belmond.....	do.....	E						0															X	200
Blakesburg.....	Graded School.....	E						0																
Blencoe.....	High School.....	E	54	54	54			0			P.		X			X							X	
Bondurant.....	do.....	E	36	36	36	0		0				0						X					X	20
Boone.....	do.....	E						0															X	200
Burlington.....	do.....	E	72					X			C. V.	X	X				X	X		100	0	0	X	250
Clarion.....	do.....	R						0			P.									0			X	250
Clarksville.....	do.....	R	30	30	45	60		0					X					X		0			X	50

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
KANSAS—contd.																								
Galena.....	High school.....		27	54	54			0			P. C.	0		X				X					X	\$200
Galva.....	do.....							0			P. V.	0						X				0	X	50
Garden City.....	do.....	E						0			P. V.	0						X				0	X	50
Gas.....	do.....		45	60	60	60		0			P. C.	0	X	0	0	0	0	0	0			0	X	15
Goddard.....	do.....	R	45	45	45	45		X			P.	0										0	X	15
Goodland.....	Sherman County High School.....	E	108	108				0			P. V.	0											X	90
Great Bend.....	High School.....	E	180					0	\$630			0	X	X				X			15		X	100
Herington.....	do.....	E	60	60	75	90		X	608	A.	P. C. V.	0	X	X				X			20		X	400
Holton.....	do.....	E						0			P. C. V.	0								8			X	25
Hope.....	do.....	R						0				0											X	25
Humboldt.....	do.....	E	0	0	0			0				0											X	25
Hutchinson.....	do.....	E	135	135	135			0	765	A.	P. C.	0	X					X			25		X	300
Independence.....	Montgomery County High School.....	R	48	48							V.	0											0	300
Junction City.....	High School.....	E					X	0	1,200	A. N.	P. V.							X					0	300
Kinsley.....	do.....	E									P.							X			6		X	300
Kirwin.....	do.....	E	45	45				X			C. V.								X		4	75	X	40
La Crosse.....	do.....	E	134	0	0	0		0			C. V.	X	X							100	20	150	X	50
La Harpe.....	do.....	E						0			V.							X			0	0	X	50
Leavenworth.....	do.....	E				24		0			P.	X	X							25	5	5	X	15
Lenora.....	do.....	E						0															X	25
Lucas.....	do.....	E						0															X	25
Lyons.....	do.....	E						0			C. V.												X	25
Malze.....	do.....	E	81		68	270		X	675	N.	C. V.							X					X	150
Mankato.....	do.....	E						0			P.	X	X					0				0	X	100
Maple Hill.....	do.....	E	20	20	40	60		0															X	25
Mayetta.....	do.....	E	90	90	90	90		0															X	25
Meade.....	do.....	E	90	90	90	90		X	585	A. N.	P. C.	X	X							20	0		X	25
Muscotah.....	do.....	R	18	18	18	18		0											X		0		X	25

[illegible]

CONCLUSION:

Bedford.....	High School.....
Benton.....	Marshall County High School.....
Calhoun.....	McLean County High School.....
Corbin.....	High School.....
Covington.....	do.....
Crittenden.....	do.....
Cynthiana.....	do.....
Danville.....	Graded School.....
Earlington.....	do.....
Elisabethtown.....	Hardin County High School.....
Franklin.....	Graded and High School.....
Georgetown.....	High School.....
Harrodsburg.....	Graded School.....
Henderson.....	Barret Manual Training High School.....
Hickman.....	High School.....
Hedgenville.....	Graded and High School.....
Junction City.....	do.....
La Center.....	Ballard County High School.....
La Grange.....	High School.....
Louisville.....	Central High School (negro).....
Do.....	Male High School.....
Do.....	Manual Training High School.....

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
KENTUCKY—Contd.																									
Mount Vernon	High School	R	15	15	15	15		X			P. V.	X	X	X	X	0	0	X	0	\$10	15	\$15	X	\$20	
Newport	do	E						0			P. V.							X				X	75		
Nicholasville	do	R						0			P.							X				X	25		
Owensboro	do	E	120	120	120	120	X	0	\$720	A.	X							X		750		X	X	200	
Paducah	Lincoln High School (negro)	R									P. C.	X	X	X	X	X	0	X	X		10	0	X	500	
Paris	High School	R	25	25	33	33	X		600		P. C.							X			0	0	X	8	
Robert	Graded and High School	R									V.														
Somerset	High School	R	54	54	54	54	X	X	675		P. C. V.	X	X	X	X	X	0	X	X	200	75	100	X	175	
Sturgis	do	R						0			P. C.							0	0	25	6	12	X	25	
Winchester	do	E	90	90	60	60		0			P. C.		X	X	0	X	0	X	0	500			X	200	
LOUISIANA.																									
Abbeville	High School	R	48	48	48	48	X	X	540	A.	P.	0	X					X		100			X	50	
Amite	do	R	48	48	48	48	X	X	585	A.	C.	0													
Arcadia	do	R	36	36	36	36	X	X	500	A.	P. C.	0	X					X	X	50	12		X	50	
Baton Rouge	do	R	54	54	54	54	X	X	675	A.	P.	0				X			X	35	25	100	X	75	
Bernice	do	R	54	54	54	54	X	X	540	N.		X	X		X					300	60	300	X	150	
Boyce	do	R	48	48	48	48	X	X	585	N.		0	X		0				X				X		
Brusly	do	R	27	27	27	27	X	X			P. C.	0		0				X					X	50	
Bunkie	do	R	72	72	72	72	X	X	540		P. C.	0						X		0	0	0	X	150	
Cataro	Grand Prairie High School	R	60	60	75	75	X	X	540	A.	P. C. V.	0	X					X		0	0	0	0		
Chemeryville	High School	R	48	48	48	48	X	X	585	N.	P. C.	0	X						X				X		
Columbia	do	R	72	72	72	72	X	X	540	A. N.	P. C.	0	X										X		
De Ridder	do	R	54	54	54	54	X	X	675	A. N.	P. C.	0								50			X		
Donaldsonville	do	R	54	54	54	54	X	X	720	A.	P.	0								10			X	50	
Eros	do	R	120	120	135	150	X	0	585		P. V.	X	X	X					X				X		
Evergreen	do	R	72	72	72	72	X	X	675	A.	P. C.	X	X	X	X	X			X		15		X		

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
MAINE—continued.																								
Dixfield.....	High School.....	E 1	36	36	36	36	0	X	.....	.....	P.	.....	X	0	X	.....	.....	X	0	\$25	2	\$5	0	.....
Lewiston.....	Jordan High School.....	{ E 3	76	76	76	76	X	X	.....	N.	P. C.	X	X	X	X	0	.....	X	0	.....	0	.....	X	.....
Madison.....	High School.....	E	54	54	54	54	X	X	\$240	.....	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	500	0	.....	X	\$50
Portland.....	Deering High School.....	E	.....	.....	.....	81	0	0	450	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	200	25	.....	X	1,000
Do.....	High School.....	E	0	0	135	135	X	0	1,400	.....	V.	.....	.....	.....	.....	.....	.....	X	.....	.....	.....	.....	X	2,500
Rockland.....	do.....	E	54	54	54	54	X	X	.....	.....	.....	X	.....	.....	.....	.....	.....	.....	.....	0	0	.....	.....	.....
St. Agatha.....	do.....	R	.....	.....	.....	.....	.....	.....	.....	A.	.....	.....	X	.....	.....	.....	.....	.....	.....	0	0	.....	.....	.....
Sanford.....	do.....	E	27	27	27	27	X	X	900	A.	P. C.	.....	X	.....	.....	.....	.....	.....	.....	25	0	0	X	350
Sangerville.....	do.....	R	18	18	18	18	X	X	600	A.	P.	.....	.....	.....	.....	X	.....	.....	.....	.....	.....	.....	.....	25
Shapleigh.....	Lindsey High School.....	E	.....	.....	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Skowhegan.....	High School.....	E	27	27	27	27	X	X	500	N.	C.	X	0	0	X	0	0	X	0	20	12	30	X	100
Thomaston.....	do.....	E	54	54	54	54	X	X	360	A.	P. C.	X	X	.....	.....	.....	.....	.....	.....	100	0	.....	X	100
Warren.....	do.....	E	30	30	30	30	0	0	.....	.....	P.	.....	X	.....	.....	.....	.....	.....	0	0	.....	X	20	
Washburn.....	do.....	R	.....	.....	.....	.....	0	0	.....	.....	P. V.	.....	X	.....	.....	.....	.....	.....	800	500	300	X	500	
Waterville.....	do.....	E	36	36	36	36	0	0	.....	.....	P. V.	.....	.....	0	X	X	0	X	.....	500	0	.....	0	.....
Westbrook.....	do.....	E	72	72	72	72	0	0	.....	.....	V.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....
West Paris.....	do.....	E	.....	.....	.....	.....	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winslow.....	do.....	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
MARYLAND.																								
Baltimore.....	Baltimore City College.....	{ R 2	60	60	60	60	X 2	0	{ 1,500	A. N.	P. C.	.....	X	.....	.....	.....	.....	X	.....	1,800	125	1,200	0	.....
Do.....	Baltimore Polytechnic Institute.	R	144	144	108	144	X 6	0	{ 1,000	()	P. V.	.....	X	0	0	0	0	X	0	9,000	.....	500	.....	.....
Do.....	Eastern High School.....	R 2	72	72	72	72	X	0	1,200	.....	V.	0	X	0	X	X	X	X	X	.....	25	.....	X	.....

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
MASSACHUSETTS—continued.	Malden.....	R, E	54	54	54	54	X	0	3950	A.	C. C.	X	X	X	X	X	X	X	X	\$1,000	0	0	X	\$1,000
	Mansfield.....	E	26	26	26	26	X	X	400	A.	P. C.	X	X	X	X	X	X	X	X	75	0	0	X	100
	Marblehead.....	E	80	80	80	80	X	X		A.	P. C. V.	X	X	X	X	X	X	X	X	50	0	0	X	350
	Marlboro.....	E	36	36	36	36	X	X		A.	P. C. V.	X	X	X	X	X	X	X	X	200	0	0	X	150
	Maynard.....	{ R 2 E 2 }	27	27	27	27	X	X	400	A.	P. C.	X	X	X	X	X	X	X	X	50	0	0	X	3,000
	Medford.....	E	40	40	160	160	X	X	800	A.	P. C.	X	X	X	X	X	X	X	X	500	0	0	X	3,000
	Melrose.....	E					X	X	750	A.	P. C. V.	X	X	X	X	X	X	X	X	500	0	0	X	200
	Methuen.....	E	27	54	54	54	X	X	850	A. N.	P. C. V.	X	X	X	X	X	X	X	X	10	0	\$2	X	1,000
	Middleboro.....	E	30	30	30	30	X	X	800	A.	P. C.	X	X	X	X	X	X	X	X		0	0	X	500
	Milford.....	E	80	80	80	80	X	X	800		P. C. V.	X	X	X	X	X	X	X	X		0	0	X	500
	Millbury.....	{ R 2 E 2 }	48	48	48	48	X	X	400	A. N.	P. C.	X	X	X	X	X	X	X	X	100	25	0	X	1,000
	Milton.....	R, E	54	54	54	54	X	X	1,000	A.	P. C. V.	X	X	X	X	X	X	X	X	500	12	0	X	1,000
	Nantucket.....	R	27	27	27	27	X	X	500	A.	P. C. V.	X	X	X	X	X	X	X	X	200	5	25	X	500
	Natick.....	R, E	36	36	36	36	X	X			P. C. V.	X	X	X	X	X	X	X	X	100	0	100	X	500
	Needham.....	E					X	X	800	A.	P. C.	X	X	X	X	X	X	X	X	0	0	50	X	850
	New Bedford.....	E					X	X	1,100	A.	P. C.	X	X	X	X	X	X	X	X	1,000	25	40	X	850
	Newburyport.....	R, E	60	60	60	60	X	X	1,750	A.	P. C.	X	X	X	X	X	X	X	X	500	50	200	X	3,500
	Newtonville.....	E					X	X	1,000	A.	P. C.	X	X	X	X	X	X	X	X	75,000	45		X	
	Do.....	Technical High School.....	R	400	400	400	400	X	X	{ 1,000 2,500 }		P. C. V.	X	X	X	X	X	X	X				X	
	North Adams.....	Drury High School.....	E	350	350	350	350	X	X	1,100	A. N.	P. C. V.	X	X	X	X	X	X	X	1,000			X	800
	North Andover.....	Johnson High School.....	E	60	60	60	60	X	X	1,900	A.	P. C. V.	X	X	X	X	X	X	X	500		15	X	
	North Attleboro.....	High School.....	E	60	60	60	60	X	X	1,000	A.	P. C.	X	X	X	X	X	X	X				X	
	Northboro.....	do	E	36	36	36	36	X	X		A.	P. C.	X	X	X	X	X	X	X				X	
	North Dartmouth.....	Smith Mills High School.....	R	26	26	26	26	X	0			P. C.	X	X	X	X	X	X	X	5	5	5	X	25

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
MASSACHUSETTS—continued.	Watertown.....	{R 1 E 3}	60	60	120	120	X	X	\$900	.....	P. C. V.	X	X	X	X	X	0	0	X	\$300	5	\$125	X	\$300
	Wayland.....	{R 1 E 1}	60	60	0	0	X	X	700	.....	P. C.	X	.....	.....	.....	.....	.....	X	X	100	.....	.....	X	200
	Webster.....	E	60	60	60	60	X	X	.....	A. N.	P. C.	X	X	X	.....	.....	.....	X	.....	300	25	.....	X	400
	Wellesley.....	{R 1 E 3}	72	72	72	72	X	0	.....	A.	P. C.	X	X	X	X	.....	.....	.....	.....	1,000	50	50	X	600
	West Acton.....	R	27	.....	.....	.....	X	X	200	A.	P. C. V.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Westboro.....	E	80	80	80	80	X	X	750	.....	P. C. V.	X	X	X	0	.....	.....	.....	.....	100	.....	.....	X	500
	West Boylston.....	R	50	50	50	50	X	X	200	A.	P. C.	X	X	X	.....	.....	.....	.....	.....	50	0	.....	X	100
	Westfield.....	{R 1 E 3}	27	27	27	27	X, 2	X	{1,000 1,000}	A.	P. C.	X	X	X	X	X	.....	.....	.....	500	25	250	X	900
	Westminster.....	E	27	27	27	27	X	X	900	A.	P. C. V.	0	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	X	100
	Weston.....	R	27	27	27	27	X	X	250	A.	P. C. V.	X	X	X	0	.....	.....	.....	.....	150	6	150	X	500
	Whitinsville.....	E	48	48	48	48	X	X	600	A.	P. C.	X	X	X	.....	.....	.....	.....	.....	1,000	.....	.....	X	500
	Whitman.....	{R 2 E 2}	36	36	36	36	X	X	850	A.	P.	X	X	X	X	X	0	0	0	25	0	.....	X	125
	Winchendon.....	E	54	54	54	54	X, 2	X	{1,000 600}	.....	P. C. V.	X	.....	.....	.....	.....	.....	X	.....	300	.....	.....	X	1,000
	Winchester.....	E	108	108	54	54	X	X	600	.....	C.	X	X	.....	.....	.....	.....	.....	.....	450	0	.....	X	3,500
	Winthrop.....	E	54	54	54	54	X, 2	X	{1,200 700}	.....	P. C. V.	X	X	X	.....	.....	.....	X	.....	300	.....	.....	X	500
	Worcester.....	E	36	36	36	36	X	X	1,300	.....	P. C.	X	X	X	.....	.....	.....	.....	.....	.....	.....	.....	X	5,500
	Do.....	E	135	135	135	135	X	X	1,000	A.	P. C.	X	X	X	X	1,000	X	1,200
	Wrentham.....	R	48	48	48	48	X	.....	170	A.	P.	X	X	X	.....	.....	.....	.....	.....	50	.....	.....	X	50
	Yarmouth Port.....	R, E	54	112	112	112	X	X	700	A.	P. C.	0	X	X	X	0	.....	.....	.....	25	12	15	X	100

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
MICHIGAN—contd.																								
Harbor Beach.....	High School.....	E	100	100	100	40	X	X	\$500	N.	P. C.	X	X	0	X	X	0	X	0	15	15	X	X	\$125
Homer.....	do.....	E	54	0	0	0	X	X	450	N.	P. C.	X	X	0	X	X	0	X	0	6	6	X	X	75
Houghton.....	do.....	E	24	24	24	24	X	X	700		P. C. V.	X	X	0	X	X	0	X	0	40	40	X	X	50
Hubbardston.....	do.....	E	54	54	54	54	X	X	600		P. C.	X	X	0	X	X	0	X	0	10	10	X	X	300
Hudson.....	do.....	E	120	120	120	60	X	X	900	N.	P. C. V.	X	X	0	X	X	0	X	0	25	25	X	X	100
Ionia.....	do.....	E	67	84	100	60	X	X	810	A.	P. C.	X	X	0	X	X	0	X	0	0	0	X	X	75
Iron Mountain.....	Hulst High School.....	E	76	0	0	0	X	X	1,000		C.	X	X	0	X	X	0	X	0	100	100	X	X	50
Jackson.....	High School.....	E	108	108	108	108	X	X	750		P. C.	X	X	0	X	X	0	X	0	250	250	X	X	200
Kalamazoo.....	East Avenue High School.....	E	108	108	108	108	X	X	600	N.	P. C.	X	X	0	X	X	0	X	0	50	50	X	X	683
Do.....	Portage Street High School.....	E	108	108	108	108	X	X	600	N.	C.	X	X	0	X	X	0	X	0	0	0	X	X	100
Do.....	Woodward Avenue High School.....	E	90	90	90	90	X	X	630		P. C. V.	0	X	0	X	X	0	X	0	250	250	X	X	50
Laingsburg.....	High School.....	R	38	38	38	28	X	X	475	A.	V.		X	0	X	X	0	X	0	0	0	X	X	300
Lake Linden.....	do.....	E	360	180	180	180	X	X	1,200	A.	C.		X	0	X	X	0	X	0	100	100	X	X	50
Lake Odessa.....	do.....	E	72	72	72	72	X	X	550	N.	V.		X	0	X	X	0	X	0	200	200	X	X	500
Lansing.....	do.....	E	114	114	114	114	X	X	750	A. N.	P.		X	0	X	X	0	X	0	100	100	X	X	200
Lealie.....	do.....	R	72	72	72	72	X	X	500	A.	C. V.		X	0	X	X	0	X	0	50	50	X	X	150
Ludington.....	do.....	E	72	72	72	72	X	X	550	N.	C.		X	0	X	X	0	X	0	25	25	X	X	300
Manchester.....	Central High School.....	E	30	30	30	55	X	X	1,400	N.	P. C.		X	0	X	X	0	X	0	250	250	X	X	500
Maple Rapids.....	High School.....	R, E	45	45	45	54	X	X	1,000	N.	P. C.		X	0	X	X	0	X	0	500	500	X	X	100
Marquette.....	do.....	E	90	90	90	90	X	X	315	A.	P. V.		X	0	X	X	0	X	0	0	0	X	X	50
Marquette.....	do.....	E	27	27	27	27	X	X					X	0	X	X	0	X	0			X	X	
Marshall.....	do.....	E	45	45	45	55	X	X					X	0	X	X	0	X	0			X	X	

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
MINNESOTA—contd.																									
Austin.....	High school.....	E	60	60	75	75	X	X	\$630	A.	P. C. V.	X	X	X		X	X	X	X	\$500	25		X	\$550	
Barnesville.....	do.....	E																							
Bemidji.....	do.....	E	72				X	X	765	A.	P. C.	X	X	0	X	X	0	X		280	30	\$50	X	200	
Biwabik.....	do.....		160	160				0			V.	X	X							50	25	15	X	250	
Blooming Prairie.....	do.....	R	108	108	108	108		0	585		P. C. V.	X	X								50		X	400	
Blue Earth.....	do.....	E	180	180	180	180	X	X	585	A.	P. C. V.	X	X	0	X						25	50	X	300	
Breckenridge.....	do.....	E									P. P.		X	0						300	0	0	X	60	
Caledonia.....	do.....							0												10	0	0	X	20	
Cloquet.....	do.....	E	0	0	48		X	X	720	A.	P.	X								400	0	0	X	300	
Cokato.....	School of Agriculture.....	E			135															50					
Coleraine.....	Greenway High School.....	E	81	54	0	0		0			P.		0	0						200	20		X	400	
Cottonwood.....	High School.....	R, E	30	180				0			V.									50			X	100	
East Grand Forks.....	do.....	E					X	X	765	N.	P.	X			X					150	10	50	X	500	
Elk River.....	do.....		90	90	72	72		0												86	10		X	300	
Elmore.....	do.....	E	120	120	120	120		0			P. C. V.	X	X		X					25	20	200	X	1,500	
Eveleth.....	do.....	E	45	60	75	75	X	0	900		P. C. V.	X	X		X					1,000	50	0	X	400	
Excelsior.....	do.....	E	54	54	54	54	X	0	1,300	A.	P. P.	X	X							1,000	0	20	X	200	
Fergus Falls.....	do.....	E					X	X	1,050		P. V.	X	X	0						200	0		X	400	
Glencoe.....	do.....	E					X	0	630	A. N.	P. C.	X	X							400	50		X	200	
Glenwood.....	do.....	E	54	54	54	54	X	0			P. C. V.	X	X							25	25	40	X	100	
Grand Rapids.....	do.....	R	180	180			X	X	765		P. P.	X	X		X					350	100		X	400	
Granite Falls.....	do.....	E	180	180	180	180	X	0		A.	P. C. V.	0	X							50	10		X	300	
Hallock.....	do.....	E	50	50	50	50		0			P. C. V.		X							100	50	100	X	200	
Harmony.....	do.....	R									P. C.									25					
Hastings.....	do.....	R	72	72				0			P. C. V.		X							150	120	150	X	500	
Herman.....	do.....	R	60	60	60	60		0			P. P.									12	50		X	40	
Hinckley.....	do.....	E					X	0	955	A.	P. V.	0	X							250	50	60	X	250	

School	Boys	Girls	Total	Enrollment	Attendance	Dropouts	Graduates	Teachers	Principal	Superintendent	Trustees	Board of Education	Other
Hopkins	20	27	47	20	27	27	27	27	27	27	27	27	27
Hutchinson	120	120	240	120	120	120	120	120	120	120	120	120	120
Jackson	72	72	144	72	72	72	72	72	72	72	72	72	72
Lake City	45	45	90	45	45	45	45	45	45	45	45	45	45
Lake Crystal	120	120	240	120	120	120	120	120	120	120	120	120	120
Lakefield	72	72	144	72	72	72	72	72	72	72	72	72	72
Litchfield	45	45	90	45	45	45	45	45	45	45	45	45	45
Mankato	120	120	240	120	120	120	120	120	120	120	120	120	120
Mapleton	36	36	72	36	36	36	36	36	36	36	36	36	36
Central High School	126	126	252	126	126	126	126	126	126	126	126	126	126
East High School	200	200	400	200	200	200	200	200	200	200	200	200	200
North High School	240	240	480	240	240	240	240	240	240	240	240	240	240
West High School	258	258	516	258	258	258	258	258	258	258	258	258	258
High School	27	27	54	27	27	27	27	27	27	27	27	27	27
Montevideo	72	72	144	72	72	72	72	72	72	72	72	72	72
Morton	60	60	120	60	60	60	60	60	60	60	60	60	60
New Richmond	48	48	96	48	48	48	48	48	48	48	48	48	48
New Ulm	36	36	72	36	36	36	36	36	36	36	36	36	36
Owatonna	12	12	24	12	12	12	12	12	12	12	12	12	12
Park Rapids	240	240	480	240	240	240	240	240	240	240	240	240	240
Pine City	15	15	30	15	15	15	15	15	15	15	15	15	15
Pine Island	60	60	120	60	60	60	60	60	60	60	60	60	60
Pipestone	12	12	24	12	12	12	12	12	12	12	12	12	12
Red Lake Falls	240	240	480	240	240	240	240	240	240	240	240	240	240
Redville	15	15	30	15	15	15	15	15	15	15	15	15	15
Rochester	60	60	120	60	60	60	60	60	60	60	60	60	60
Rush City	127	127	254	127	127	127	127	127	127	127	127	127	127
St. James	125	125	250	125	125	125	125	125	125	125	125	125	125
St. Paul	180	180	360	180	180	180	180	180	180	180	180	180	180
Central High School	96	96	192	96	96	96	96	96	96	96	96	96	96
Humboldt High School	48	48	96	48	48	48	48	48	48	48	48	48	48
John A. Johnson High School	300	300	600	300	300	300	300	300	300	300	300	300	300
Do	54	54	108	54	54	54	54	54	54	54	54	54	54
St. Peter	16	16	32	16	16	16	16	16	16	16	16	16	16
Sauk Center	135	135	270	135	135	135	135	135	135	135	135	135	135
Shakopee	81	81	162	81	81	81	81	81	81	81	81	81	81
Sherburne	120	120	240</										

One in art school.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
MISSISSIPPI.	Booneville.....	R	45	45	45	45							X	X									X	\$10
	Brooksville.....	E											X	X						\$25			X	15
	Charleston.....	E											X	X									X	500
	Clarksdale.....	R	90	90	90	90							X	X									X	100
	Cleveland.....	R	45	45	60	60																	X	
	Columbus.....	R	18	18	18	18			\$540														X	
	Como.....	R	90	90	90	90	X							X	X								X	
	Corinth.....	R	72	72	72	36	X		900	A.N.				X	X					600	200		X	
	Enterprise.....	E												X	X								X	
	Jefferson County High School.....	R	54	54	54	0								X	X								X	0
	Fayette.....	E	180	180	0	0								X	X								X	0
	Florence.....	R												X	X								X	15
	Goodman.....	R												X	X								X	
	Greenville.....	E								828	A.			X	X						150	25	X	
	Grenada.....	R	90	90	90	135	X							X	X								X	
	Graded School (negro).....	R	30	61	126	126	X			630	A.			X	X						100	0	X	
	Gulfport.....	R	60	60	75	75								X	X								X	
	Itka.....	R												X	X								X	
	Louis.....	E												X	X								X	
	Lumberton.....	R	180	90	90	90								X	X								X	25
	High School.....	R												X	X								X	150
	do.....	R	36	36	36	36								X	X						250	25	X	
	High School, No. 2 (negro).....	R	54	54	54	54								X	X								X	300
High School.....	E												X	X								X		
Meridian.....	E												X	X								X		
Do.....	E	60											X	X								X		
Wechsler Graded School (negro).....	E												X	X								X		
High School.....	E	90	90	45	45								X	X								X	25	
Monticello.....	E	44	44	44	44								X	X						75	0	X	25	
Mont Point.....	R	54	54	54	54								X	X								X		
Mount Olive (R. F. D.).....	R												X	X								X		
Newton.....	E	90	90	90	90								X	X						100	10		X	100

[illegible]

Art and technical schools.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
MISSOURI—contd.																									
Lewistown.....	High School.....	E	32	32	240	240	0	0	\$405	A.N.	P.C.	0	X	0	0	0	X	0	0	0	10	0	0	\$200	
Lexington.....	do.....	E	240	240	240	240	X	0			P.C.	0	0	0	0	0	X	X	\$50	6	0	X	\$200		
Malden.....	do.....	R	45	45	45	45	0	0			P.C.	X	0	0	0	0	0	X	X	100	0	0	X	80	
Mansfield.....	do.....	E	0	0	0	0	0	0			P.C.V.	0	X	0	0	X	0	X	25	15	\$25	X	75		
Maplewood.....	do.....	E	270	270	0	0	X	0	800	A.	P.	0	X	0	0	0	0	X	0	0	0	0	0	200	
Mexico.....	McMillan High School.....	E	270	270	270	270	0	0	495		P.	0	X	0	0	0	0	0	45	0	0	X	50		
Montgomery City.....	High School.....	R	180	180	180	180	0	0			P.C.	0	X	0	0	0	0	0	20	15	45	X	20		
Monticello.....	do.....	E	40	40	40	60	0	0			P.C.	0	0	0	0	0	0	0	0	0	0	0	0		
Morley.....	do.....	R	180	90	90	90	0	0				0	X	0	0	0	0	0	0	0	0	0	0		
Neosho.....	do.....	R	0	0	0	0	0	0			P.	X	X	0	0	0	0	0	0	0	0	0	90		
New Hampton.....	High School.....	R	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	5		
New London.....	do.....	R	45	45	45	60	0	0				0	0	0	0	0	0	0	0	0	0	0	50		
Oronogo.....	do.....	E	42	42	42	42	0	0			P.	X	X	0	0	0	0	0	0	0	0	0	10		
Osceola.....	do.....	R	24	24	24	36	0	0				0	X	0	0	0	0	0	0	0	2	0	0		
Pacific.....	do.....	R	90	90	90	36	0	0			P.	0	X	0	0	0	0	0	0	0	0	0	25		
Parnell.....	do.....	R	32	32	30	30	0	0			P.C.	0	X	0	0	0	0	0	20	3	0	0	10		
Pilot Grove.....	do.....	R	60	60	60	75	0	0			P.	0	X	0	0	0	0	0	15	0	0	0	200		
Platte City.....	do.....	E	0	0	0	0	0	0			P.	0	X	0	0	0	0	0	0	0	0	0	20		
Potosi.....	do.....		0	0	0	0	0	0				0	X	0	0	0	0	0	0	0	0	0	0		
Rockville.....	do.....		0	0	0	0	0	0				0	X	0	0	0	0	0	0	0	0	0	0		
Rolla.....	do.....	E	12	14	16	20	0	0			P.	0	X	0	0	0	0	0	0	0	0	0	0		
Rosendale.....	do.....	R	0	0	0	0	0	0			P.	0	X	0	0	0	0	0	0	0	0	0	0		
St. Charles.....	do.....	R	40	0	0	0	0	0	675	A.	P.	0	X	0	0	0	0	0	0	100	0	0	0	100	
St. Joseph.....	Central High School.....	E	180	180	180	0	X	0			P.V.	0	X	0	0	0	0	0	300	0	100	X	1,500		
St. Louis.....	Sumner High School (negro).....	R, E	150	150	120	120	X	0	890	A.	P.C. V.	0	X	0	0	0	0	0	3,000	60	500	X	600		
Do.....	Yeastman High School.....	R, E	135	135	135	135	X	0	2,180 (1,300)	A.	P.C.	0	X	0	0	0	0	0	2,500	175	0	X	1,100		

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NEBRASKA—CON.																								
Edison.	High School.	E	45	45	45	45		0			P. C.	0	X							0	0	0	X	\$50
Elk Creek.	do.		60	60	60	60		0			P.	0	X					X		0		0	X	50
Elmwood.	do.	R	75	75	75	75		0			P.	0	X									0	X	20
Elwood.	do.	R	90	90	90	15		0			P.	0	X								6	0	X	30
Emerson.	do.	E	90	90	90	18		0			P.	0	X							\$5	0	0	X	40
Endicott.	do.	R						0			P. C.	X	X							10	25	\$100	X	50
Eustis.	do.	R						0			P.	0	X							10	20	0	X	200
Franklin.	do.	E						0			P. C.	0	X							5	6	0	X	40
Genoa.	do.	R	0	0	0	0		0			P.	0	X							0	0	0	X	20
Giltner.	do.	E	54	27	27	27		0			P.	0	X							0	0	0	X	40
Goehner.	do.	E	0	0	0	0		0			P.	0	X							0	0	0	X	20
Gretna.	do.	R	45	45	45	45		0			P.	0	X							0	0	0	X	50
Hampton.	do.	R	45	45	45	45		0			P.	0	X							0	0	2	X	30
Hardy.	do.	R	72	144	144	144		0			P. V.	X	X							150	10	0	X	50
Harrison.	do.	R	36	24	6	8	X	X	\$495	A.	P. V.	X	X							90	50	200	X	550
Hartington.	do.	R	60	60	60	60		0		N.	P. C.	0	X							150	6	0	X	50
Harvard.	do.	R	90	90	90	90		0			P.	0	X							50	70	0	X	25
Havelock.	do.	R	4	4	4	4		0			P.	0	X							5	4	0	X	20
Hemingford.	do.	R	54	54	54	54		0			P. C. V.	0	X							125	0	0	X	50
Hickman.	do.	R	20	20	20	20		0			P.	0	X							0	0	0	X	300
Hildreth.	do.	R	72	72	72	72		0			P. C.	0	X							0	0	0	X	50
Holmesville.	do.	R	45	45	45	45		0			P. C. V.	0	X							0	0	0	X	50
Indianola.	do.	R	20	20	20	20		0			P.	0	X							0	0	0	X	300
Kearney.	do.	R	72	72	72	72		0			P. C.	0	X							0	0	0	X	50
Kenesaw.	do.	R	45	45	45	45		0			P.	0	X							0	0	0	X	50
Kennard.	do.	R	45	45	45	45		0			P.	0	X							0	0	0	X	50
Laurel.	do.	R	45	45	45	45		0			P.	0	X							0	0	0	X	200
Lexington.	do.	E	45	45	45	45	X	0	900	N.	P.	X	X							0	0	0	X	200

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
NEBRASKA—con.																										
	Waverly.....	R	36	36				0			P. C.	0	X						X	\$10	3		X	\$50		
	Wayne.....	R	50	60	75	75	X	X	\$360	N.	P. C.	0	X							75	12		X	500		
	Western.....	R						0			P. C.	0											X	50		
	Westpoint.....	E						0			P.	0	X										X			
	Wilsonville.....	E						0				0	X										X	600		
	York.....	E										X	X										X			
NEVADA.																										
	Elko.....	R						0			P.	0						X		500	0		X	75		
	Goldfield.....	E					X	0		A.	C.	0														
	Reno.....	E	270	270	0	0		0			V.	0						X		300	3		X	100		
	Tonopah.....	E	36	36	36	36	X	X	945	A. N.	P. C.	0	X							125	37	\$25	X	110		
	Winnemucca.....	R	36	36	36	36	X	X	900	N.	P. C.	0	X			X	0	X			6		X	50		
NEW HAMPSHIRE.																										
	Berlin.....	R	143	143	71	29		0			V.		X					X		200	0		0			
	Canaan.....	E	36	36	72	72																	X	200		
	Claremont.....	E	36	36	36	36	X	X	900	A.	P. C.	X	X			0	0	X	0	25	0		X			
	Concord.....	R	54	54	36	36	X	X	900	A. N.	P. C.	X	X			0	0	X		500			X			
	Dover.....	E	36	36	77	77	X	X	550	A.	C.	X	X							300		250	X	1,000		
	East Jaffrey.....	R	27				X	X		N.	C.	X	X										X	35		
	Conant High School.....						X	X				X	X										X			
	Tuck High School.....	{ R 3 E 1 R 2 E 2	145	145	145	145	X	X		A.	P.									250	0		X	350		
	Exeter.....						X	X																		
	Franklin.....		42	21	21	21	X	X	530	A.	P. C.	X	X		X					200	0	25	X	150		

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DRAWING IN PUBLIC HIGH SCHOOLS.

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[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NEW JERSEY—con.	Washington.....	R	80	80	70	65		0			P. C. V.	X	X			X		X	X	\$100	30	\$75	X	\$200
	Westfield.....	E	54	54	54	54	X	X	\$800			X	X					X		500			X	500
	West Hoboken.....	R	26	50	26	26	X	X	1,700	A. N.	P. C.	X	X	X				X		500	6	0	X	376
	Woodbine.....	R	50	50				0			P. V.	0	X							80		0	X	40
	Woodbridge.....	E	27				X	X	850	A.	P. C. V.	0	X					X		15	0	0	X	150
	Woodbury.....	E	26	26	26	26		X			C. V.	0	X	X	X				0	400	0	0	X	
NEW MEXICO.	High School.....	R	36	36	54	54						0	X						0	25	0	0	X	40
	do.....	E	45	45	30	20	X	0	540	A.	C. V.	0	X						0	50	10	75	X	100
	do.....	E	48	48	48	48		0			P. C.	0	X	X		X	X	X	0	0	0	0	0	
	do.....	R	81	81	81	81		0			P. C.	X	X		X				0	200	0	0	X	60
	do.....	E	48	48			X	0	900	A.	C. V.	0	0	0	0	0	0	0	0	0	0	0	0	0
	do.....	E	135	135	135				1,575											6	0		0	50
	New Mexico Military Institute.	R	150	75	0	0	X	X	675	A.	P.	X	X					X		200	20		X	5
	High School.....	R																						
	do.....	R																						
	do.....	R																						
NEW YORK.	High School.....	E	150	150	0	0	X	X	600	N.	P. C.	X	X						X	100	30		X	1,000
	do.....	R	57	57				0			P.	X	X							25				
	do.....	R						0																
	do.....	R	47	47				0			P. C.	0	X										X	
	do.....	R	80	80				0			P. C.	0	X									10	X	
	do.....	R	54	54	27	27	X, 3	0	{1,000 {1,200}	N.	P. C. V.	0	X						X	20	400		X	900

Albion.....	do.....	E	54	54	27	27	X	X	0	600	A. N.	P. C.	X	X	X	X	0	100	45	50	X	350
Alden.....	do.....	E	90	90	90	90	X	X	0	600	N.	P. C.	0	0	0	0	0	10	.....	.....	0	50
Alexander.....	Union School.....	E	54	54	27	.....	X	X	0	600	N.	P. C.	.....	.....	.....	.....	.....	100	50	.....	0	100
Alexandria Bay.....	High School.....	E	.....	.....	.....	.....	X	X	0	540	P. C. V.	P. C. V.	X	.....	.....	.....	.....	.....	11	.....	X	100
Alfred.....	Academy.....	{ E 2	50	50	50	50	X	X	0	550	N.	C.	.....	.....	.....	.....	.....	50	.....	.....	X	150
Allegany.....	High School.....	E	80	80	.....	.....	X	X	0	.....	N.	P. V.	.....	.....	.....	.....	.....	.....	7	.....	X	20
Allentown.....	Union School.....	E	.....	.....	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	25	30	X	300
Altamont.....	High School.....	E	50	50	50	50	X	X	0	600	N.	P. C.	.....	.....	.....	.....	.....	0	25	5	0	.....
Altmar.....	Union School.....	E	.....	.....	108	54	X	X	0	600	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Amenia.....	High School.....	E	54	54	54	54	X	X	0	850	A.	C.	.....	.....	.....	.....	.....	.....	.....	.....	X	100
Amsterdam.....	do.....	E	81	54	27	27	X	X	0	450	N.	P.	.....	.....	.....	.....	.....	10	6	0	X	100
Andes.....	Hilton Memorial High School.....	E	40	40	40	40	X	X	0	650	N.	P. C.	.....	.....	.....	.....	.....	3	3	0	X	125
Andover.....	High School.....	E	30	30	30	30	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	0	25	0	X	30
Angola.....	do.....	E	.....	.....	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	25	20	150	X	150
Antwerp.....	do.....	R	60	60	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	25	20	25	X	20
Arcade.....	do.....	R	57	57	57	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	X	300
Argyle.....	do.....	E	.....	.....	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Arkport.....	Union School.....	E	27	27	27	27	X	X	0	650	N.	C.	.....	.....	.....	.....	.....	25	.....	.....	0	.....
Attica.....	High School.....	E	81	81	81	81	X	X	0	800	A.	P. C.	.....	.....	.....	.....	.....	300	50	500	X	350
Auburn.....	Academic High School.....	E	.....	.....	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Au Sable Forks.....	High School.....	E	120	120	80	80	X	X	0	.....	A.	P. C.	.....	.....	.....	.....	.....	20	50	500	X	.....
Avon.....	do.....	R	20	34	34	34	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	12	50	0	.....
Babylon.....	do.....	R	72	72	72	72	X	X	0	.....	N.	P. C. V.	.....	.....	.....	.....	.....	150	.....	.....	X	100
Bainbridge.....	do.....	E	120	120	.....	.....	X	X	0	.....	N.	P. V.	.....	.....	.....	.....	.....	.....	.....	.....	X	400
Ballston Spa.....	do.....	E	48	48	72	.....	X	X	0	600	N.	P. V.	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Batavia.....	do.....	E	81	81	54	54	X	X	0	900	N.	P. C.	.....	.....	.....	.....	.....	250	50	100	X	500
Bath.....	Haverling High School.....	E	60	60	60	60	X	X	0	675	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	X	800
Bay Shore.....	High School.....	E	81	81	.....	.....	X	X	0	700	N.	P. C.	.....	.....	.....	.....	.....	25	12	.....	X	800
Belfast.....	do.....	E	54	54	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	5	40	X	5
Bellport.....	Union School.....	E	.....	.....	.....	.....	X	X	0	600	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Belmont.....	High School.....	E	135	54	.....	.....	X	X	0	.....	N.	C. V.	.....	.....	.....	.....	.....	300	20	50	X	200
Bergen.....	do.....	R	160	0	0	0	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	20	20	30	.....
Berkshire.....	do.....	E	.....	.....	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	4	.....	X	40
Berlin.....	Union School.....	E	54	54	.....	.....	X	X	0	900	A. N.	P. C.	.....	.....	.....	.....	.....	25	0	0	X	75
Binghamton.....	Central High School.....	{ E 1	80	80	80	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	10	.....	.....	X	.....
Black River.....	High School.....	{ E 3	108	.....	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	25	0	.....	X	.....
Blasdell.....	do.....	E	.....	.....	.....	.....	X	X	0	.....	N.	C.	.....	.....	.....	.....	.....	10	15	10	X	50
Bloomington.....	Union School.....	E	60	60	60	.....	X	X	0	.....	N.	P.	.....	.....	.....	.....	.....	200	50	.....	X	200
Bollivar.....	High School.....	E	36	36	36	36	X	X	0	500	A.	P. C.	.....	.....	.....	.....	.....	5	3	.....	X	10
Bolton.....	Union School.....	E	76	76	.....	.....	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	25	.....	.....	X	150
Bolton Landing.....	do.....	E	53	53	0	0	X	X	0	.....	N.	P. C.	.....	.....	.....	.....	.....	5	3	.....	X	20
Bombay.....	High School.....	E	72	72	.....	.....	X	X	0	.....	N.	C.	.....	.....	.....	.....	.....	20	5	.....	0	.....
Brewster.....	Union School.....	R	40	40	40	40	X	X	0	.....	N.	C.	.....	.....	.....	.....	.....	25	.....	.....	0	.....
Broedalbfin.....	High School.....	E	54	54	54	54	X	X	0	575	A. N.	P. C.	.....	.....	.....	.....	.....	100	20	.....	X	100
Brocton.....	do.....	E	72	72	36	36	X	X	0	.....	N.	P. C. V.	.....	.....	.....	.....	.....	300	.....	.....	X	75
Brooklyn.....	Bushwick High School.....	{ R 2	.....	.....	.....	.....	X	X	0	.....	N.	P. C. V.	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Do.....	Commercial High School.....	{ E 2	54	54	81	81	X	X	0	.....	N.	P.	.....	.....	.....	.....	.....	.....	50	.....	X	.....
Do.....	Eastern District High School.....	{ E 2	57	57	57	57	X	X	0	2,650	A.	P. C. V.	.....	.....	.....	.....	.....	2,000	36	.....	X	500

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NEW YORK—contd.																								
Brooklyn	Erasmus Hall High School	{ R, E E 2	54	54	27	27	.....	0	.....	.....	P. C.	.....	X	0	0	0	0	0	0	.....	.....	.....	X	.....
Do	Girls' High School	{ R, E E 2	60	60	45	15	X	0	\$2,650	A.	C.	.....	X	X	.....	.....	.....	.....	.....	\$500	200	.....	X	\$2,500
Buchanan	Union School	E	54	54	54	.....	.....	0	.....	.....	P. C.	X	X	.....	.....	.....	.....	.....	.....	50	6	.....	X	25
Buffalo	Central High School	R	52	52	52	52	X	0	{ 1,200 1,700	.....	C.	X	X	0	0	0	0	0	0	300	200	\$600	X	2,000
Do	Lafayette High School	R, E	108	108	.....	.....	X	0	{ 1,200 1,700	.....	C.	X	.....	.....	.....	X	.....	.....	.....	.....	70	.....	X	.....
Do	Masten Park High School	R, E	54	54	54	54	X	0	{ 1,200 1,700	A.	C. V.	X	X	.....	.....	.....	.....	.....	.....	.....	30	0	.....	.....
Do	Technical High School	R	107	107	107	107	X	4	{ 1,200 1,700	.....	P. V.	X	.....	X	0	0	0	X	.....	800	100	125	X	350
Burdett	Union School	E	72	72	.....	.....	.....	0	525	N.	P.	.....	X	.....	.....	.....	.....	.....	.....	25	15	.....	X	200
Caledonia	High School	.....	54	54	.....	.....	.....	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Callicoon	Union School	R	90	90	.....	.....	.....	0	.....	.....	.....	.....	.....	.....	.....	X	.....	.....	.....	300	31	150	X	250
Cambridge	High School	R	40	80	80	80	.....	X	600	N.	C.	X	X	X	0	0	0	0	0	50	0	.....	X	200
Camden	do	E	108	.....	.....	.....	X	X	.....	.....	P. C.	.....	X	0	0	.....	.....	.....	.....	10	.....	.....	X	300
Camillus	do	R	60	60	80	80	.....	0	.....	.....	C.	.....	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	200
Campbell	Union School	E	50	50	.....	.....	.....	0	.....	.....	P.	.....	X	.....	.....	.....	.....	.....	.....	6	0	.....	X	20
Canajoharie	High School	E	108	108	108	108	X	X	600	N.	C. V.	X	X	.....	.....	.....	.....	X	.....	100	25	.....	X	100
Canandaigua	Academy	R	240	240	240	240	X	X	800	A. N.	P. C.	.....	.....	X	0	0	.....	.....	.....	.....	40	.....	X	.....
Canaseraga	High School	E	83	66	.....	.....	.....	0	.....	.....	P.	.....	X	0	0	.....	.....	.....	.....	.....	0	.....	X	300
Canastota	do	R	48	48	.....	.....	X	X	600	N.	C.	X	X	.....	.....	.....	.....	.....	.....	100	50	20	X	100
Candor	do	E	81	81	81	81	X	X	600	N.	P. C.	.....	.....	0	0	.....	.....	.....	.....	75	.....	.....	X	300
Canton	do	E	.....	.....	.....	.....	X	X	600	N.	P. C.	.....	.....	0	0	.....	.....	.....	.....	25	0	.....	X	750
Cape Vincent	do	R	60	60	.....	.....	X	0	.....	.....	P. C.	.....	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Carthage	do	R	72	72	.....	108	X	X	600	.....	P. C.	.....	X	.....	.....	.....	.....	.....	.....	25	78	.....	X	600

Locality	School	Grades	Enrollment	Value	Land	Water	Buildings	Other	Notes
Cassadaga	Union School	50-60	50	50	0	0	0	0	C. P.
Castile	High School	60-120	150	150	0	0	0	0	P.
Cato	do	60-120	150	150	0	0	0	0	C.
Cattaraugus	do	60-120	150	150	0	0	0	0	C.
Cayuga	Union School	12-80	12	9	X	0	0	0	C.
Center Moriches	High School	80-120	120	120	0	0	0	0	C.
Central Square	do	54-60	54	81	X	0	0	0	P. C.
Charlotte	do	60-90	60	90	X	0	0	0	P. C.
Chateaugay	do	48-80	48	80	X	0	0	0	C. V.
Chatham	High School	54-80	54	80	X	0	0	0	P. C.
Chautauqua	do	48-80	48	80	X	0	0	0	C. V.
Chester	do	60-80	60	80	0	0	0	0	C. V.
Churchville	do	54-80	54	80	0	0	0	0	C. V.
Clarence	Parker High School	54-80	54	80	0	0	0	0	P. C.
Clayton	High School	48-80	48	80	X	0	0	0	C.
Clayville	do	48-80	48	80	X	0	0	0	C.
Clifton Springs	do	48-80	48	80	X	0	0	0	P. C.
Clinton	do	48-80	48	80	X	0	0	0	C.
Clyde	do	48-80	48	80	X	0	0	0	P. C.
Clymer	Union School	53-72	53	72	0	0	0	0	P. C.
Cobleskill	High School	72-120	72	120	X	0	0	0	C.
Cohocton	Union and High School	72-120	72	120	0	0	0	0	C.
Cold Spring	Haldane High School	72-120	72	120	0	0	0	0	P. C.
Collins Center	High School	40-80	40	80	0	0	0	0	C.
Colton	Union School	72-120	72	120	0	0	0	0	C.
Constableville	do	60-80	60	80	0	0	0	0	P. C.
Cooperstown	High School	60-80	60	80	0	0	0	0	P. V.
Copenhagen	do	108-120	108	120	0	0	0	0	P. C.
Corfu	do	50-60	50	60	0	0	0	0	P. C.
Corinth	do	50-60	50	60	0	0	0	0	P. C.
Cornwall	do	50-60	50	60	0	0	0	0	P. C.
Cornwall on the Hudson	do	50-60	50	60	0	0	0	0	P. C.
Cortland	do	54-52	54	52	X	0	0	0	P. C.
Coxsackie	do	54-52	54	52	X	0	0	0	P. C.
Crown Point	Union School	60-60	60	60	0	0	0	0	P. C.
Cuba	High School	53-72	53	72	0	0	0	0	C.
Dalton	Union School	60-80	60	80	0	0	0	0	P. C.
Dansville	High School	36-72	36	72	0	0	0	0	C.
Dayton	Union School	36-72	36	72	0	0	0	0	P.
Delhi	Delaware Academy	72-72	72	72	0	0	0	0	C. V.
Depew	Union School	72-72	72	72	0	0	0	0	P. C.
Deposit	High School	72-72	72	72	0	0	0	0	P. C.
De Ruyter	do	72-72	72	72	0	0	0	0	P. C.
Dexter	do	114-152	114	152	0	0	0	0	P. C. V.
Dobbs Ferry	do	36-60	36	60	0	0	0	0	P. C.
Dolgeville	do	60-144	60	144	0	0	0	0	C.
Downsville	do	60-144	60	144	0	0	0	0	C.

DRAWING IN PUBLIC HIGH SCHOOLS.

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Union School.....	Union School.....	100	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
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Knowlesville.....	Union School.....	60	72	72	60	72	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1 Supervisor trained in an art school.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	3	Hours per year devoted to drawing.				8	9	10	11	12	13	Drawing applied to—							21	22	23	24	25
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2		4	5	6	7							14	15	16	17	18	19	20					
		Required or elective?					Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
NEW YORK—contd.																								
Millford.....	High School.....	R	90	60	60	60	0	0	0	0	C.	X	X						X	0	30	0	X	\$50
Millbrook.....	Memorial School.....	R	60	60	60	60	0	X	0	0	P.	X	X							\$25	2	0	X	50
Millerton.....	High School.....	R	60	60	60	60	0	0	0	0	C.									100	0		X	150
Mineola.....	Union School.....	{ R 2 E 2 }	80	80	40	40	X	0	\$575		P.	X	0										X	
Mineville.....	High School.....	E	76	76	38	38	X	0	0	0	P. C. V.	X	X				X	X		100	10	\$100	0	250
Mohawk.....	do.....	R, E	72	72	72	72	0	X	600	A.	P. C. V.	X	X							100	25	100	X	150
Mohira.....	do.....	E	53	53	90	90	0	0	0		P. C.	X	X			X				50	10	50	X	200
Monroe.....	do.....	E	90	90	60	60	0	0	0		P. C.	X	X							100	30	50	X	
Monticello.....	do.....	E	60	60	60	60	0	0	0	N.	P. C. V.	X	X				X	0	0	100	100		X	100
Moravia.....	do.....	E	60	60	60	60	0	0	200		P. C.	X	X					0	0	25	10	15	X	75
Morris.....	do.....	E	48	48	48	48	0	0	0		P. C.	X	X					0	0	3	10	15	X	35
Morrisville.....	do.....	E	72	72	72	72	0	0	0		P. C. V.		X						0	25	10	15	X	50
Morrisville.....	do.....	E	72	72	72	72	0	0	0		P. C. V.		X							20	15	10	X	375
Mount Kisco.....	do.....	R					X	0	0	N.	C.		X			X				10	1	100	X	
Mount Morris.....	do.....	{ R 1 E 2 }					X	0	0		V.	X	X				X		0	1,000	50	100	X	
Mount Upton.....	do.....	R	90	0	0	0	X	0	1,450	A.	C. V.	X	X							100	50	100	X	
Mount Vernon.....	do.....	E					X	0	0		C. V.	X	X							100	50	25	X	230
Naples.....	do.....	R	54	54	80	80	X	X	500	N.	P. C.	X	X							200	20		X	500
Newark.....	do.....	E	53	53	80	80	X	0	550	A.	V.	X	X										X	
New Berlin.....	do.....	E	120				0	0				X	X										X	
Newburgh.....	Free Academy.....	R	66	66	33	33	X, 2	X	{ 500- 850 }		P. C.	X	X				X	X		250	25	100	X	500
New Rochelle.....	High School.....	R	80	80	80	80	X	0	1,000		P.	X	X				X	X		400	90	100	X	200
New York.....	De Wilt Clinton High School.....	{ R 2 E 2 }	60	60	60	60	X	0	2,650	A.	C.	X	X							8,000	150		X	1,000
Do.....	High School of Commerce.....	{ R 2 E 1 }	30	60	30	30	X, 3	0	{ 1,300- 2,650 }	A. N.	P. C. V.		X							2,000	100		X	200

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NEW YORK—contd.																								
Phoenix.....	High School.....	R	48	48	48	48	X	X	\$500	A.	P. C.	X	X		X					\$100	12	\$75	X	\$100
Pine Plains.....	Seymour Smith Academy.....	{ R ² E ²	54	54	54	54	0	X			C.	X	X							0	0	X	50	
Pittsford.....	High School.....	E		120	0	0	0	0			C.		X							15	0	0	X	300
Plattsburg.....	do.....	{ R ² E ²	80	80	120	120	X	X	750	A.	C.	X	X							300	40	25	X	600
Poland.....	do.....	E	60	60			0	0				X								30			X	150
Port Chester.....	do.....	R, E	86	86	86	86	X	0	1,150	A. N.	P. C.	X	X					X			25		X	250
Port Jervis.....	do.....	E	30	30	30	30	X	0	750	A.	P.	X	X					X			20		X	60
Port Leyden.....	do.....	E	80	80			0	0			P.	X	X							0		0	X	100
Portville.....	do.....	R	60	60	60	60	X	X	575	N.	C.	X	X							100	20	0	X	75
Port Washington.....	do.....	R	114	114	92	92	X	X	900	A.	P. V.	X	X					X		500	30		X	100
Prattburg.....	Franklin Academy and Prattsburg High School.	R						0				X	X	X						400			X	100
Pulaski.....	Academy.....	R	48	48			X	X	550		P. V.	X	X					X		100	100	200	X	500
Randolph.....	High School.....	E	48	48	72	0	X	X	500	A.	C.	X	X					0		50	10	10	X	150
Ravena.....	do.....	R	60	30	0	0	0	0			P.	0	X					X			6		X	200
Red Creek.....	do.....	R, E	81	0	0	0	0	0			V.	0	X					0					X	100
Red Hook.....	Union School.....	R	48	48	0	0	0	X			P. C.	0		X				X		50	10		X	100
Rensselaer.....	High School.....	{ R ¹ E ³	54	54	54	54		0			P.	X	X						25	25		X	150	
Rensselaer Falls.....	Union School.....	R		60	60	60	0	0			P.	X	X								6		0	400
Rhinebeck.....	High School.....	R	54	54			X	0	550	N.	P. C.	X	X					X		200	30	100	X	250
Richfield Springs.....	do.....	R	60	60			0	0	550	A.	P. C.	X	X					0		50			X	700
Richville.....	Union School.....	E	60	60			0	0			P. V.	0	X					0		6			X	4,000
Riverhead.....	High School.....	R, E	80	80	80	80	0	0	600	N.	P. C. V.	0	X					0					X	700
Rochester.....	East High School.....	R, E	80	80	80	80	0	0	1,600	A.	P. C. V.	0	X					0		300	20		X	4,000
Do.....	West High School.....	E	136	136	136	136	X	0	1,200	A.	P. C.	X	X	X	X	X	X	X	1,800	8	25		X	600

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.						School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NEW YORK—contd.																								
Stockton.....	Union School.....	R	54	54				0				X	X					0		\$10		0	0	\$100
Stony Brook.....	do.....	E	72	72	0	0		0				X	X					0		0		0	X	\$100
Stony Point.....	High School.....	E	72	72				0				X	X					X		10		\$25	X	100
Suffern.....	do.....	E						0														0	X	300
Syracuse.....	Central High School.....	{ R 1 E 3 }	54	54	27	27	X, 4	0 { \$950 1,500 }				X	X	0	0			X				0	X	2,500
Do.....	North High School.....	{ R 1 E 3 }	60	60	60	60	X	0 1,200	A.			X	X	X	0	0	0	0	0	107	20		X	705
Theresa.....	High School.....	R 2	72	72	0	0		0										0		0		2	X	
Three-Mile Bay.....	Union School.....	R	60	60				0								X					6	10	X	
Ticonderoga.....	Central High School.....	R	54	54	54	54	X	700				X	X							500	25		X	100
Tivoli.....	Union School.....	R	72	72	72	72		0				X	X							0	0	0	X	200
Tomkins Cove.....	do.....	R	81	81	0	0		0				0	0	0	0	0	0	0	0	50	30	0	X	450
Tonawanda.....	High School.....	E	108	54			X	800	A.			X	X					X		200	100	50	X	
Troupsburg.....	Union School.....	R	51	51				0												0	0		X	500
Troy.....	High School.....	R	81	81	81	81	X	850	A.			X	X	X						250	30	0	X	1,200
Do.....	Lansingburgh High School.....	E	76	76	114	76	X	750	A. N.			X	X	X				X		300	25	25	X	300
Trumansburg.....	High School.....	E	120	120	120		X	575	N.			X	X	X						50	20		X	150
Tully.....	High School.....	R 2	54	54	54	54		0												10	20		X	
Turin.....	Union School.....	E	72	72				0										X				10	X	10
Tuxedo Park.....	Tuxedo High School.....	R	54	54				0												30	30	50	X	300
Unadilla.....	High School.....	E	50	50	50	50		0												25			X	10
Union.....	Union-Endicott High School.....	R	81	54			X	600	N.			X	X										X	800
Valley Falls.....	High School.....	E	60					0												10			X	60
Van Etten.....	Union School.....	E	60					0															X	30
Vernon.....	High School.....	E	60	60	30	30	X	550	N.			X	X					X					X	25
Victor.....	do.....	R	60	60				0															X	80
Waddington.....	do.....	R	54	54	54	54		0				X	X	X				X	X	100			X	

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
NORTH CAROLINA—continued.	Goldsboro.....	R	135	135	135	90			\$800		P. V.	X	X	X				X		\$800	100	\$2,000	X	
	Do.....	R	72								P.		X									X		\$50
	Hayesville.....																							
	Henderson.....	E	0	0	0	0																	X	200
	Hertford.....	R	30										X							10			X	
	Jamestown.....	R	36	24	24	12					C.		X							10	5		X	
	Kittrell.....	R											X							10			X	
	La Grange.....	R									C.		X							0			X	25
	Laurinburg.....	R									P. C.		X							100			X	100
	Macon.....	R	72	72	72	72					P.		X										X	
	Marion.....	R											X							100			X	200
	Mocksville.....	E	25	25	12	12					P.		X							100			X	
	Morven.....	R	27	27	27	27		X			P.		X										X	50
	Newbern.....	R									P.		X							300			X	
	Oriental.....	R	27	27							P. C.		X							0			X	
	Potocasi.....	E											X							0			X	
	Roeboro.....	R	30	30	30	30					P.		X							0			X	
	Roebill.....	R	30	30	30	35					P.		X							0			X	
	Scotland Neck.....	R									P.		X							0			X	
	Smithfield.....	R	144	144	144	144		X		A. N.	C. V.		X							0			X	150
	Spring Hope.....	R	54	0	0	0					C.		X							0			X	25
	Stantonsburg.....	E									V.		X							0			X	
	Sumterfield (R. F. D. No. 1).....	R	40	40	40	40					P.		X										X	
	Trenton.....	E											X										X	10
	Washington.....	R	48	48	64	64					P. V.		X							0			X	10
	Waynesville.....	R	60	0	0	0					P.		X							100			X	200

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
OHIO.	Akron.....	R	96	96	96	96	X	0	\$105	A. N.	P. C.	X	X	0	X	X	0	X	X	\$2,000	25	.....	X	\$1,500
	Alger.....	R	60	60	90	90	0	0	.....	.....	V.	.....	.....	.....	.....	.....	.....	.....	.....	200	.....	.....	X	200
	Alliance.....	E	0	0	0	0	0	0	720	N.	P. C. V.	X	X	.....	X	.....	.....	X	.....	100	50	\$200	X	300
	Alpha.....	R	54	54	54	54	X	X	.....	.....	P. C. V.	0	X	X	X	X	0	0	.....	80	.....	0	.....	200
	Athens.....	R	0	0	72	72	X	X	630	N.	P. C. V.	X	X	0	X	X	X	0	.....	1,500	50	.....	X	400
	Barberton.....	E	50	50	50	50	X	X	765	A.	P. C. V.	0	X	.....	.....	.....	.....	.....	.....	80	180	.....	X	50
	Batavia.....	E	36	36	36	36	X	X	405	.....	P. C.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	50
	Berlin Heights.....	R	60	60	30	30	0	0	.....	.....	P. C.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	76
	Beverly.....	R	.....	.....	.....	.....	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	X	50
	Bloomdale.....	R	.....	.....	.....	.....	0	0	.....	.....	P.	0	X	.....	.....	.....	.....	X	.....	.....	.....	.....	X	.....
	Bloomington.....	R	.....	.....	.....	.....	0	0	.....	.....	P. C.	0	X	.....	.....	.....	.....	.....	.....	.....	10	.....	X	.....
	Botkins.....	R	36	36	36	36	X	X	72	.....	P. C.	0	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
	Bowling Green.....	E	36	36	36	36	X	X	630	N.	P.	0	X	.....	.....	.....	.....	.....	.....	35	0	.....	X	50
	Bryan.....	E	36	36	36	36	X	X	405	.....	P. C.	0	X	.....	.....	.....	.....	0	0	.....	10	15	.....	50
	Bucyrus.....	{R E}	27	27	.....	.....	X	X	765	A.	P. C.	.....	.....	X	0	0	0	0	0	50	52	.....	X	200
	Canton.....	E	72	72	72	72	X	0	1,200	A. N.	P.	X	0	0	0	0	0	0	0	400	.....	.....	X	500
	Cardington.....	E	48	0	0	48	X	X	405	N.	P.	0	.....	.....	.....	.....	.....	.....	.....	20	0	.....	X	40
	Cassstown.....	R	72	72	72	72	X	X	315	A.	P.	X	.....	.....	.....	.....	.....	.....	.....	25	5	.....	X	25
	Celina.....	E	48	48	48	48	X	X	630	A.	P. C.	0	X	0	0	0	X	0	0	135	20	10	X	50
	Chicago Junction.....	E	27	.....	.....	.....	X	X	450	A.	P. C.	0	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Walnut Hills High School.....	R	54	54	54	54	X	0	1,800	A. N.	P. C.	X	X	X	X	X	X	X	X	200	10	.....	X	1,200
	West Evening High School.....	E	144	144	144	144	X	0	.....	.....	P. V.	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Woodward High School.....	R, E	54	54	54	54	X, 2	0	{2,000 1,500}	.....	P. C.	X	X	.....	.....	.....	.....	.....	X	2,000	30	.....	X	.....

Cleveland.....	{ R 2 E 2 }	270 } 270	270	270	270	.....	X, 4	0	1, 200	A.	P. C.	X	X	X	X	X	X	200	25	0	X	500
Do.....	E	270	270	270	0	0	X, 2	X	{ 1, 100 1, 200 }	A.	P. C. V.	X	0	X	X	X	0	300	0	0	X	1, 000
Do.....	E	190	190	.....	.....	.....	X, 2	0	{ 1, 100 1, 800 }	.....	P. V.	.....	.....	X	X	X	.....	2, 000	115	.....	X	500
Do.....	R	135	135	135	135	135	X, 8	0	{ 1, 200 2, 200 }	.....	P. C. V.	.....	.....	X	X	X	.....	2, 000	.....	.....	0	.....
Do.....	E	360	360	360	360	0	X	0	.....	A.	V.	.....	.....	X	X	X	.....	500	50	.....	X	1, 000
Do.....	{ R 2 E 1 }	216 } 216	216	216	.....	.....	X, 3	0	{ 1, 000 2, 000 }	A.	P. C. V.	.....	.....	.....	X	.....	.....	450	.....	.....	X	.....
Do.....	E	270	270	270	.....	.....	X, 3	0	{ 1, 000 2, 000 }	.....	P. C. V.	.....	.....	X	X	X	.....	.....	15	.....	X	1, 500
Do.....	R, E	360	360	0	0	0	X, 3	0	{ 800 1, 500 }	()	P. C.	.....	.....	X	X	X	.....	800	100	.....	X	500
Do.....	R, E	285	285	285	.....	.....	X, 5	0	{ 1, 000 2, 000 }	A.	P. C. V.	.....	.....	X	X	X	.....	.....	.....	.....	X	2, 500
Cleveland Heights..	{ R 2 E 2 }	36 } 36	36	72	72	72	X	X	1, 130	A.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Clyde.....	R	27	0	0	0	0	X	X	285	.....	P. C.	.....	0	0	0	.....	.....	.....	.....	.....	X	100
College Corner.....	R	24	24	0	0	0	X	X	162	N.	P. C.	.....	.....	.....	.....	.....	.....	25	12	50	X	200
Columbus.....	R	72	72	72	72	72	X	0	1, 500	.....	P. C.	.....	.....	0	X	X	.....	200	.....	.....	X	100
Do.....	{ R 1 E 3 }	60 } 60	60	60	60	60	X	0	1, 500	N.	P. C.	.....	.....	X	.....	.....	.....	500	.....	.....	X	750
Do.....	{ R 2 E 2 }	54 } 54	54	54	54	54	X	0	1, 500	A. N.	P. C. V.	.....	.....	0	0	.....	.....	300	0	700	X	.....
Do.....	{ R 1 E 3 }	60 } 60	60	60	60	60	X, 2	0	1, 500	A.	P. C.	.....	.....	X	X	X	.....	500	.....	.....	X	.....
Do.....	R	54	.....	.....	.....	.....	X	0	1, 300	A. N.	P. C.	.....	.....	.....	X	X	.....	400	.....	200	X	600
Do.....	{ R 1 E 3 }	54 } 54	54	.....	.....	.....	X	0	.....	A. N.	P. C.	.....	.....	X	0	.....	.....	300	25	.....	X	.....
Conneaut.....	R, E	.....	.....	.....	.....	.....	0	X	.....	.....	P. C. V.	.....	.....	X	X	.....	.....	.....	.....	.....	.....	.....
Convoy.....	R	.....	.....	.....	.....	.....	0	X	.....	.....	P. C. V.	.....	0	0	0	.....	0	0	2	.....	X	20
Coolville.....	E	.....	.....	.....	0	0	0	X	.....	.....	P. C. V.	.....	.....	0	0	.....	.....	0	0	0	0	.....
Copley.....	E	.....	.....	.....	.....	.....	0	.....	.....	.....	C.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coshocton.....	E	81	.....	.....	.....	.....	X	X	720	A.	.....	.....	.....	.....	.....	.....	.....	50	0	0	X	100
Dayton.....	E	144	.....	.....	.....	.....	X	0	1, 400	N.	.....	.....	.....	.....	.....	.....	.....	300	0	.....	X	300
Parker First Year High School	E	60	60	60	60	60	X	0	1, 500	.....	P.	.....	.....	X	X	X	.....	2, 000	500	4, 000	X	1, 000
Steele High School.....	E	54	54	54	54	54	X	0	630	A.	P. C.	.....	.....	.....	X	X	.....	.....	.....	.....	X	5, 000
Do.....	R	36	36	18	18	18	X	0	.....	.....	P. C.	.....	.....	.....	.....	.....	.....	.....	25	.....	X	.....
Doylestown.....	R	27	27	81	81	81	X	X	1, 400	A.	P. C. V.	.....	.....	.....	.....	.....	.....	2, 000	.....	.....	X	2, 500
East Cleveland.....	{ R 2 E 2 }	135 } 270	270	.....	.....	.....	X	0	1, 000	A.	P. V.	.....	.....	.....	.....	.....	.....	500	.....	.....	X	500
Elyria.....	E	45	45	90	180	.....	0	0	.....	.....	P. C. V.	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Flushing.....	R	.....	.....	.....	.....	.....	0	0	.....	.....	P. C. V.	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Fort Jennings.....	E	36	36	36	36	36	X	X	405	A. N.	P. C.	.....	.....	.....	.....	.....	.....	150	50	225	X	.....
Franklin.....	R	36	36	36	36	36	X	X	.....	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Garrettsville.....	R	72	72	.....	.....	.....	X	X	585	A.	P. C.	.....	.....	.....	.....	.....	.....	25	.....	.....	X	200

1 One trained in both normal and art schools—one trained in art school.

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, vocational, or cultural, or	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
OKLAHOMA—contd.																								
Geary.....	High School.....	R	27	27	27	27					P.		X							0	0		X	
Guthrie.....	Logan County High School.....	E			144	144					P.												X	\$50
Hartshorne.....	High School.....	E									P.	0	X										X	
Henryetta.....	do.....	E																					X	
Kiowa.....	do.....	R	20	20	20	20					V.									0				
Lawton.....	do.....	R																X					X	100
Lenapah.....	do.....	R	54	54	54	72					P. C.	0								\$18	2		X	40
Lindsay.....	do.....	R ²	60	90	60	60						0	X							0		0	X	
Luther.....	do.....	E	32	32								0												
Manitou.....	do.....	R	120	90	60	60	X		\$485	A. N.	P. C.	X	X	X				X	X	500	100	\$1,000	X	200
Muldrow.....	do.....	R	45	45	45	45					P.		X							700	80	100	X	300
Muskogee.....	Central High School.....	R, E	108	108	0	0					P. C.	X	X	0	0	0	0	X	X	1,700	9		X	300
Oklahoma.....	High School.....	E				0	X, 3	0	{ 800- 1,350 }		P. V.	X	X		0		X	X	X				X	
Do.....	Douglas High School (negro).....	R											X										X	
Prague.....	High School.....	R	36	36	36	36					C.									0			X	
Stroud.....	do.....	R	60	60	60	75					P.									0			X	
Terral.....	do.....	R	25	30	35	35														0	0	0	X	
Tonkawa.....	University Preparatory School.....	R	72	135	135	135	X		900	A.	P. C. V.	X	X	X	0	X	0	0	X	500	24	600	X	350
Waleetka.....	High School.....	R	135	135				X			P. C.	0	X											
Wellston.....	do.....	E										X	X											
Yale.....	do.....	E	81				X		495	N.	P.	X												
OREGON.																								
Albany.....	High School.....	E			370	370		0			P. C. V.		X							200			X	30
Astoria.....	do.....	{ R 1 E 1 }	0	180			X	X	1,000	A. N.	P. C.	X	X			X		X		300	25	50	X	200

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
PENNSYLVANIA—continued.																									
Bellevue.....	High School.....	R	40	0	0	0		X			P.		X							\$300				0	
Bentleyville.....	do.....	R	32	64	64	54		0			C.		X						X	2		X			
Benton.....	do.....	R	54	54	54	48		0			P. C.		X						X	50	10	X		\$50	
Berwick.....	do.....	E	18	18	30	48	X	X	\$720	A. N.	P. C. V.	X	X							0					
Blanchard.....	Liberty District High School.	E									P.		X									X			
Blooming Glen.....	Hilltown Township High School.	R	18	90	90			0		N.															
Blossburg.....	High School.....		24	48	48	48	X			N.	P. V.	X	X								0				
Blue Bell.....	Whitpain High School.....	R	36	36	32			X			P. P.														
Boalsburg.....	High School.....	E								N.															
Bolivar.....	do.....	R	32	32	32	32	X	X	288	A.	C. V.	X	X						X	200		X		300	
Braddock.....	do.....	R	0	0	90	90		0			C. V.	X	X						X			X		500	
Bradford.....	do.....	E						0												250	0	X			
Branchdale.....	Reilly Township High School.	R	45	45	45	45		X			V.		X						X	25	10	X		25	
Brockport.....	Horton Township High School.	R	32	32				X			P. V.														
Buckingham.....	High School.....	E	54	54	0	0	X	X	900		P.								X	1,000		X		600	
Butler.....	do.....	R 2	36	36	36	36	X	0			P. C.	0	X												
Camp Hill.....	do.....	R	72	72	72		X	X	680		C.	X	X	0	0	0	0	0	0	100	0	X		50	
Canton.....	do.....	{ R 2 E 1																							
Catasauqua.....	do.....	R	45	60	90	54		0			V.	0	X						X	300	10	X		200	
Chandlers Valley...	Sugar Grove Township High School.	R	36	36	36	36		0			P.	0	X							75	0	X		25	
Chester.....	High School.....	E	86	86	114	114		0			P. C. V.	X	X							400	10	X		300	
Chicora.....	Millersburg High School.....	R	45	10	20	90		0			P. C. V.	0	X							6	6	X		10	
Clarion.....	High School.....	R	45	45	90	90	X	X	540		P. C. V.	0	X							50	25	X		100	
Clearfield.....	do.....	R	48	48			X	X	900	N.									X	600	100	X		100	

Clintondale.....	Porter Township High School.	R	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
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One trained in an art school, one in a technical school.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
PENNSYLVANIA—continued.																								
Gettysburg	High School	R	45	45	45	45	X	0	\$540	A.	P. C. V.	X	X			X			X	\$200			X	\$300
Girard	Battles Memorial School	R	45	45	45	45	X	X			P. C. V.	X	X									X	X	300
Gordon	High School	R	30	30	45	45	0	X			P. C.	0	0			0	0	0	0			X	X	10
Gouldsboro	Lehigh Township High School	R					0	0			P. C.	0	0			X			X				X	200
Great Bend	High School	R	80	80			0	0				0	0			0	0	0	0			10	X	1,200
Greensburg	do.	E	54	54	54	54	0	0		N.	P. C.	X	X			0	0	0	0			0	X	
Hanover	do.	E	24	24	24	24	X	0	810			X	X			0	0	0	0			0	X	
Harrisburg	Central High School	{ R 2 E 2 }	27	27	27	27	X	0	1,150		P. C.	X	X			X					12		X	
Do.	Technical High School	R	107	101	101	101	X, 2	0	{ 1,100 1,250 }		V.		X	X			X	0	X	3,500		\$150	0	
Hatboro	High School	R	45	57	57	57	0	X			P. C. V.	0	X			X				70	10		X	200
Hawthorn	do.	E					0	0												0	0		X	
Haselhurst	Hamlin Township High School	E	36	36	36		0	0			P. C.	X	X					X		10	0	0	X	10
Herndon	High School	E	16	16			0	0			C.	0	X										X	
Holidaysburg	do.	E	48	48	48	48	X	0	550	A.	P. C. V.	0	X						X	500	43	200	X	150
Honesdale	do.	E	160				0	0					X							100			X	500
Houtzdale	do.	R	40	40	30	30	0	0					X										X	100
Hughesville	do.	R	18	18	18	18	0	0			C.		X										X	
Huntingdon	do.	R	0		0	0	0	0			P. C. V.		X			X							X	
Indiana	do.	R	60	60	60	60	X	0	960	A.	P. C. V.	X	X			0		X			20		X	
Jamison City (R. F. D., No. 1).	Sugarloaf Township High School	R	48	48	24	24	0	0			P. C. V.	0	X						X				X	
Johnsbourg	do.	R	40	40	24	24	0	0	675	N.	P. C.	0	X										X	
Juniata	do.	R	24	0			X	0	855		P. C.	X								100	10	50	X	10
Kittanning	do.	R	0	54			0	0			P. C.	0								100	40		X	
Kutztown	do.	R	27	54	54	54	0	0			P. C.	0	X					X			0		X	100

Laceyville.....	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.	do.
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TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
PENNSYLVANIA—continued.	Milroy.....	R						0			P.	X	X										X	\$50
	Milton.....	E	36	36	36	36	X	X	\$720	N.	P. V.	X	X					X	X	0			X	300
	Mohnton.....	R	70	70	25			0			P. V.	0	X						X	\$10			X	20
	Montrose.....	R	81	81			X	X	540	N.	P. C. V.	0	X			X	0	0	X	100			X	450
	Moorestown.....	R	60	60	90	90		0			P. C. V.	X	X			0	0	0	X	70	75	\$70	X	50
	Morgantown.....	R	27	27	27		0	0			P. C.	0	X							10	25		X	15
	Morrisville.....	R					X	X	495	A. N.	P. C. V.	0	X					0	X	350	21	136	X	25
	Mount Jewett.....	R	36	72	72	72		0			C.	0	X					0	0	50		10	X	20
	Mount Joy.....	R					X		180	A.	P. C.	X	X			X		X		225	5	5	X	100
	Natrona.....		20	20	30	20		0				0	X										X	
	Nesquehoning.....	R	90	90	0	0	X	0		A.	P.		X							300		500	0	
	New Bethlehem.....	R	72	72	72			0			P. C. V.		X					X	X	80	15	100	X	10
	New Brighton.....	E	96	96	27	27	X	X	540	A. N.	P.	0	X					X	X				X	
	New London.....	R	27	27	27	27		0			P.	X	X			0	0	0	X			0	X	
	Newport.....	R	25	25				0			P.		X							0			X	15
	Newtown.....	R	36	36	36		X	X	540	A. N.	C.		X										X	
	Norristown.....	R	36	36	36	36		0			P. C.		X										X	
	Northampton.....	R, E	60	60			X	X	900	A.	P. C.	X	X							750	12		X	50
	North East.....	R	144	72				X	495	N.	P.	0	X					0	0	100	0	0	X	100
	North Wales.....	R	24	24	24			X			P. C.	X	X					0	0				X	50
	Oakmont.....	R	24	24	24		X	X	810	N.	P. C.	0	X		X								X	
	Oley.....	R	27	27				0			P. C.	X	X							0			X	
	Packerton.....	R	36	36				0			P.	0	X						X				X	

[illegible]

1 Art and technical schools.

High schools, art schools, and colleges.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
PENNSYLVANIA—continued.	Clymer Township High School	R	36	36				0			P. V. C.	0	X	X									X	\$10
	Seagertown.....	R						0			P. C.	X	X							\$200		0	X	200
	St. Marys.....	{R 2 E 2}	60	60	120	120	X	X	\$530	A. N.	P. C.	X								25		0	0	
	Sandy Lake.....	R						0				X	X											10
	Saxton.....	R	48	48	48	48	X	X	585	A.	P.	X	X			X				2,500			X	300
	Scottdale.....	R	0	135	0	68	X	0	1,250	A.	P. C.	X	X							200	45	\$50	X	775
	Scranton.....	R 2	0				X	0	{1,250 1,300}	(1)	P. V.	X	X	X	X	0	0	X		1,115	40		X	1,300
	Technical High School.....	R	129	129	129	129	X, 2	0					X	X										100
	High School.....	R						0			P. C.	X	X							100	40		X	150
	do.....	E	24	24	24	24	X	X	808	A.	P. C.	0	X										X	
	do.....	R	24				X	X	563	N.	P.	0											X	
	Sheakleyville and Sandy Creek High School.	R			120			0				0	X											
	Shenandoah.....	R	45	60	75	90	X	X	630	A. N.		X	X	0	0	0	0	0	X	500		0		
	Shickshinny.....	R	36	36	36		X	0			P.	0	X							0		0	X	
	Shippensburg.....	R	24	24	24	24	X	X	450	A.	P. C.	0	X							100		0	X	
	Shoemakersville.....	R	36	36				0			P.	0	X	0	0	0	0	0	0	5	0	X	X	5
	Shunk.....	R	0					0																
	Sigel.....	E	12	12	12			0															X	
	Fox Township High School.....	R	95	60				0			P. C.	0	X							100	0		X	10
	Eldred Township High School.....	R						0			P. C.												X	50
	Fell Township High School.....	R						0			P. C.												X	
	High School.....	R						0			P.												X	
	do.....	R	72	68	1 5	135		0				X	X							100	0	0	X	
	do.....	R	54	81				0					X										X	
	Souderton.....	R	36					0												25			X	
	South Bethlehem.....	R	54	54	54	54	X	0	750	A. N.		X	X							200			X	25

DRAWING IN PUBLIC HIGH SCHOOLS.

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[illegible]

1 One trained in art school, one in college.

One trained in an art school and one in a university.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.		
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
RHODE ISLAND.																										
Ashaway.....	Hopkinton High School.....	R	53	53	53	...	0	0	...	...	...	0	X	...	...	...	...	...	X	...	0	...	0	\$100
Barrington Center..	High School.....	{R 1 E 1}	75	75	...	...	X	X	\$600	A. N.	...	X	X	...	...	...	...	...	X	\$50	0	...	X	100
Central Falls.....	do.....	E	50	50	...	...	X	X	750	A.	P. C.	X	X	...	X	...	...	...	X	600	...	...	X	1,100
East Providence...	do.....	...	54	54	0	0	...	...	800	A.	P. C.	X	X	...	...	...	...	...	...	...	...	...	...	...
Hope Valley.....	do.....	R	24	24	24	24	0	0	...	...	P.	0	...	...	...	...	...	...	...	...	...	...	...	...
Pawtucket.....	do.....	E	108	162	162	162	X, 2	0	{ 650 950 }	A.	P. C. V.	X	X	...	X	...	...	...	X	...	...	...	X	750
Providence.....	Classical High School.....	E	...	...	...	...	X	0	800	N.	P.	0	X	0	0	X	0	0	0	150	...	...	X	...
Do.....	English High School.....	E	5	54	54	54	X	X	{1000- 2,000}	A.	P. C.	0	X	0	0	0	0	0	0	...	81	...	X	...		
Do.....	Evening High School.....	E	200	200	200	200	X, 8	0	...	...	P. C. V.	X	X	X	0	X	0	0	X	300	...	...	X	...
Do.....	Hope Street High School.....	E	...	...	...	...	X	0	800	A.	C.	...	...	...	0	0	0	0	0	...	...	...	...	500
Do.....	Technical High School.....	R	135	135	135	135	X, 7	0	{ 700- 2,200 }	1	P. C. V.	X	X	X	X	0	0	0	X	75,000	350	...	X	...		
Wakefield.....	South Kingston High School..	R	57	57	...	...	X	0	400	...	P. C.	X	X	0	0	0	0	0	0	...	0	0	X	...
Warren.....	High School.....	E	60	60	60	60	X	X	410	A.	C.	0	X	0	0	0	0	0	0	25	0	0	X	1,200		
Warwick.....	do.....	R, E	27	27	27	27	X	X	1,000	A. N.	P. C.	X	...	...	...	...	...	...	...	...	...	...	...	...
Westerly.....	do.....	{R 1 E 3}	54	54	54	54	X	X	850	A. N.	P. C.	X	X	0	0	0	0	0	X	350	25	...	X	50		
Woonsocket.....	do.....	E	28	28	28	28	X	X	1,000	A.	P. C. V.	...	X	X	X	X	0	0	X	250	...	...	X	200
SOUTH CAROLINA.																										
Cameron.....	High School.....	...	28	28	56	56	
Central.....	High School (Negro).....	...	160	160	...	72	0	X	...	...	V.	X	0	0	0	0	0	0	0	...	...	\$16	0	...
Chapin.....	High School.....	R	...	...	80	60	0	0	...	...	P.	...	X	...	...	...	...	...	...	100	...	...	X	...

[illegible]

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
TENNESSEE—con.																									
Ripley.....	High School.....	R	90	90	90	90	X	0	\$405	N.	C.	0	X	X							0	0	X	\$50	
Sharon.....	Training School.....	R	48	48	48	48	X	0			P.	0	X							0	5	0	X	50	
Soddy.....	High School.....	R	180	180	180	180	X	X	540	A.	C.	0	X	X	X					\$150	0	0	X	200	
Union City.....	do.....	R																							
TEXAS.																									
Albany.....	High School.....	R					0	0					X	0	0	0	0	X	0	0	0	0	X	50	
Alice.....	do.....	R						0					X												
Alvarado.....	do.....	R	27	27	27	27							X												
Amarillo.....	do.....	R	36	40	45	50	X	X	720	A. N.	C.	X	X	0	0	X	0	X	1,000	\$150		X	600		
Anderson.....	do.....	R	90	90	90	90	0	0			P.	0	X	0	0	0	0	0				X	12		
Aspermont.....	do.....	R	54	72	72	72	0	0			P.	0	X	0	0	0	0	0	100	10		X	200		
Beaumont.....	do.....	R	45	45	45	45	0	0			P.	0	X	0	0	0	0	0	150	10	12	X	200		
Bonham.....	do.....	R	72	72	72	72	X	0	765	N.	P. V.	0	X	0	0	0	0	0	0	0	0	X	0		
Brackettville.....	Brackett High School.....	R	36	36	54	54		0			C.	0	X	0	0	0	0	X	180	0	0	0	0		
Brennond.....	High School.....	R	100	100	100	100	0	0			P.	0	X	0	0	0	0	X	100	20		X	0		
Brenham.....	do.....	R																							
Burnet.....	do.....	R	90	90	90	90	0	0			P.	0	X	0	0	0	0	X	100	100	100	X	0		
Christoval.....	do.....	R	50	60	60	60	0	0			P.	0	X	0	0	0	0	0				0	0		
Cleveland.....	do.....	R	8	8	8	8	0	0			P.	0	X	0	0	0	0	0				0	0		
Conroe.....	do.....	R	135	135	135	135	0	0			P. C. V.	0	X	0	0	0	0	0				X	200		
Crystal City.....	do.....	R	135	135	135	135	0	0			P.	0	X	0	0	0	0	X				X	10		
Cuero.....	High School (negro).....	R	90	90	90	90	0	0				0	X	0	0	0	0	0	0	0	0	0	X	0	
Dallas.....	High School.....	R					X, 2	0	{1,300}	(1)	P.	0	X	0	0	0	0	X	1,000	1,000		X	0		
Decatur.....	do.....	R	60	60	60	60	0	0	{1,400}		P.	0	X	0	0	0	0	X				X	0		

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
UTAH—continued.																									
Price.....	Carbon County High School..	E	180	180	180	135	135	0	.....	.....	P. C. V.	X	X	0	0	0	0	X	X	\$50	0	\$25	X	\$150
Salt Lake City.....	High School.....	R, E	135	135	135	135	X, 4	0	\$1,200	(?)	P. C. V.	X	X	0	X	0	X	X	X	1,500	50	0	X	1,000	
Salt Lake City (Calders Sta.).	Granite High School.....	E	108	108	0	0	0	0	.....	.....	P. C. V.	X	0	0	0	0	0	0	0	10	0	0	0	.....
VERMONT.																									
Bennington.....	High School.....	R	114	190	190	190	0	.....	.....	.....	P. C. V.	X	X	0	0	0	0	0	0	.....	0	0	X	.....
Brattleboro.....	do.....	E	54	54	54	54	X	800	A.	.....	P. C.	X	X	0	X	0	0	X	0	250	30	0	X	.....
Burlington.....	do.....	E	29	29	29	29	X	600	A. N.	.....	C.	X	X	0	0	0	0	0	0	200	0	0	X	900
Higgate.....	do.....	R	27	27	27	27	0	0	.....	.....	C.	0	X	0	0	0	0	0	0	2	0	0	X	5
Johnson.....	do.....	R	27	27	27	27	X	600	A. N.	.....	C.	0	X	0	0	0	0	0	0	25	0	10	X	100
Middletown Springs	Middletown High School.....	E	72	54	54	54	0	0	.....	.....	P.	0	X	0	0	X	0	0	0	.....	0	0	X	25
Milton.....	High School.....	R	54	27	27	27	X	350	A.	.....	P. C.	X	X	0	0	0	0	0	0	.....	0	0	X	250
Montpelier.....	do.....	E	27	27	27	27	X	650	.....	.....	P. C.	X	X	0	0	0	0	0	0	100	0	0	X	300
Rutland.....	do.....	E	38	38	38	38	X	750	A. N.	.....	P. C.	X	X	0	0	0	0	0	0	.....	0	0	X	240
St. Albans.....	do.....	E	180	27	27	27	X	.....	.....	A.	.....	V.	0	0	0	0	0	0	0	.....	0	0	X	.....
White River Junction.	Hartford High School.....	E	27	27	27	27	X	.....	.....	.....	.....	0	0	0	0	0	0	0	0	20	.....	.....	X	300
Woodstock.....	High School.....	E	60	.....	.....	.....	X	450	A.	.....	P. C. V.	0	0	0	0	0	0	0	0	.....	.....	.....	.....	.....
VIRGINIA.																									
Bridgewater.....	High School.....	R	60	60	60	.....	0	.....	.....	.....	P. C.	0	X	0	0	0	0	0	0	0	0	0	X	.....
Crozet.....	do.....	R	32	32	32	.....	0	.....	.....	.....	C.	0	0	0	0	0	0	0	0	0	0	0	X	5
Culpepper.....	do.....	R	36	36	36	0	0	.....	.....	.....	0	0	0	0	0	0	0	0	0	.....	150	25	X	100
Cumberland.....	do.....	R	36	36	36	0	0	.....	.....	.....	0	0	0	0	0	0	0	0	0	.....	.....	.....	X	.....

[illegible]

Average.

2 Two trained in art schools, two in technical schools.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
													School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
			First year.	Second year.	Third year.	Fourth year.																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
WASHINGTON—con.																									
Kennewick.....	High School.....	R, 2	81	81	81	81		0			V. V.	X	X	X	X	X	X	X	X	\$300			X	\$250	
Kent.....	do.....	E	108	108	108	108		0			P. V.	X	X	X	X	X	X	X	X	100	20		X	60	
La Conner.....	do.....	R						0			P. C.	X	X	X	X	X	X	X	X	60	10		X	20	
Lind.....	do.....	R	54	54	36	36	X	0	\$720		P. C.	X	X	X	X	X	X	X	X	25	75		X	100	
Lynden.....	do.....	E	270	270							P.	X	X	X	X	X	X	X	X	50	20		X	100	
Palouse.....	do.....	E	90	90	120	120	X	0	800	N.	P.	X	X	X	X	X	X	X	X	150	50		X	10	
Pe Ell.....	do.....	E	36	36	36	36		0			P.	X	X	X	X	X	X	X	X		2		X	150	
Pomeroy.....	do.....	E						0			P. C.	X	X	X	X	X	X	X	X	100	25		X	100	
Port Angeles.....	do.....	E	54	54				0			P. V.	X	X	X	X	X	X	X	X	50	0		X	100	
Port Townsend.....	do.....	E	72	72	72	72		0			P. C.	X	X	X	X	X	X	X	X	75	0		X	100	
Raymond.....	do.....	E	270				X	X	900		V. C. V.	X	X	X	X	X	X	X	X	25	10		X	100	
Reardon.....	do.....	E					X	X	720	N.	P. C. V.	X	X	X	X	X	X	X	X	25	0		X	100	
Renton.....	do.....		54	54			X	0	1,000		P. V.	X	X	X	X	X	X	X	X	100	10		X	75	
Ritzville.....	do.....		180	180	180	180		0			P. C. V.	X	X	X	X	X	X	X	X		5		X	100	
Rosalia.....	do.....	E	96	96			X	0	810	N.	P.	X	X	X	X	X	X	X	X		0		X	100	
Seattle.....	Ballard High School.....	R, E	270	270	270	270	X	0	1,200	A. N.	P. V.	X	X	X	X	X	X	X	X	1,000	0		X	75	
Do.....	Broadway High School.....	E	225	225	225	225	X	0	1,500	A.	P. C. V.	X	X	X	X	X	X	X	X		0		X	100	
Do.....	Franklin High School.....	R, E	225	225	225	225	X	0			P. C. V.	X	X	X	X	X	X	X	X	2,000	50		X	50	
Do.....	Lincoln High School.....	E	225	225	225	225	X	0	1,500	A. N.	P. C. V.	X	X	X	X	X	X	X	X	500	25		X	250	
Do.....	Queen Anne High School.....	R	270	270	270	270	X	0			P. C. V.	X	X	X	X	X	X	X	X	1,200	20		X	700	
Do.....	West Seattle High School.....	E	400	400	400	400	X	0			P. C.	X	X	X	X	X	X	X	X		25		X	300	
Snohomish.....	High School.....	E	135	135	135	135	X	0	1,000	A.	C. V.	X	X	X	X	X	X	X	X	750	50		X	300	
South Bend.....	Central High School.....	E						0			P. C. V.	X	X	X	X	X	X	X	X	150			X	300	
Spokane.....	Lewis and Clark High School.....	R, E	54	54	54	54	X	0	1,700	A. N.	P. C.	X	X	X	X	X	X	X	X	3,000	65		X	3,000	
Do.....	North Central High School.....	R, E	57	57	57	57	X	0	1,300	A.	P. C. V.	X	X	X	X	X	X	X	X	500	100		X	1,000	

Taoma.....	Stadium High School.....	R, E	135	135	135	135	X, 3	0	{1, 150} 1, 200 1, 200	(1)	P. C. V.	X	X	X	X	X	1, 500	100	.....	X	2, 000
Thornton.....	High School.....	R	108	108	108	108	0	X	.....	.....	P. V.	.....	.....	.....	.....	.....	150	20	100	X	100
Toppenah.....	do.....	R	285	285	143	143	0	0	.....	.....	P. V.	.....	.....	.....	.....	.....	.....	.....	.....	X	50
Vancouver.....	do.....	E	72	72	108	108	X	0	1, 200	A. N.	P. C. V.	.....	.....	.....	.....	.....	.....	.....	.....	X	500
Waitsburg.....	do.....	E	108	108	108	108	X	0	1, 200	N.	P. C. V.	.....	.....	.....	.....	.....	200	0	.....	X	80
Walla Walla.....	do.....	R, E	54	54	54	54	0	0	.....	.....	P. C. V.	.....	.....	.....	.....	.....	.....	10	10	X	300
Wapato.....	do.....	R	36	36	36	36	X	0	675	A. N.	P. C. V.	.....	.....	.....	.....	.....	26	0	0	X	100
Washougal.....	do.....	R	36	36	36	36	0	0	.....	.....	P. C.	.....	.....	.....	.....	.....	.....	1	0	X	15
Waverly.....	do.....	E	36	36	36	36	0	0	.....	.....	V.	.....	.....	.....	.....	.....	150	0	0	X	50
Wenatchee.....	do.....	E	.....	.....	.....	.....	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	0	.....
WEST VIRGINIA.																					
Academy.....	Hillsboro High School.....	R	24	24	24	24	X	0	450	A.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	X	50
Bluefield.....	Beaver High School.....	E	.....	.....	.....	.....	X	0	785	N.	P. C.	.....	.....	.....	.....	.....	300	.....	.....	X	300
Bramwell.....	High School.....	E	.....	.....	.....	.....	0	0	.....	.....	P.	.....	.....	.....	.....	.....	0	6	.....	X	35
Clarksburg.....	do.....	E	54	54	54	54	X	0	700	N.	P.	.....	.....	.....	.....	.....	500	.....	.....	X	500
Falmont.....	do.....	E	18	18	18	18	X	0	900	A.	P.	.....	.....	.....	.....	.....	300	25	.....	X	200
Hedgesville.....	do.....	E	26	26	26	26	0	0	.....	.....	P.	.....	.....	.....	.....	.....	0	3	25	X	35
Hinton.....	do.....	E	36	36	36	36	X	0	.....	.....	C.	.....	.....	.....	.....	.....	120	3	0	X	20
Huntington.....	Douglass High School (negro).	R	27	27	27	27	X	0	675	A. N.	P. C.	.....	.....	.....	.....	.....	100	.....	.....	X	75
Keyser.....	High School.....	R	24	24	24	24	X	0	810	.....	P.	.....	.....	.....	.....	.....	.....	15	45	X	50
Morgantown.....	do.....	E	.....	.....	.....	.....	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	65
New Cumberland.....	do.....	E	45	45	.....	.....	0	0	.....	.....	P.	.....	.....	.....	.....	.....	.....	0	.....	X	200
Oceana.....	do.....	R	27	27	27	27	X	0	585	A.	P. V.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Parkersburg.....	do.....	R	48	48	48	48	0	0	675	A. N.	V.	.....	.....	.....	.....	.....	50	.....	.....	X	80
Ronceverte.....	do.....	R	36	36	36	36	0	0	.....	.....	C.	.....	.....	.....	.....	10	.....	.....	.....	X	25
Salem.....	do.....	E	54	54	54	54	0	0	.....	.....	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Shinnston.....	Clay District High School.....	E	27	27	27	27	X	0	.....	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Terre Alta.....	High School.....	E	27	27	27	27	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thomas.....	do.....	R	27	27	27	27	0	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	50
Weston.....	do.....	{R 1 E 3}	27	27	27	27	X	0	540	A.	C.	.....	.....	.....	.....	.....	.....	.....	.....	X	100
WISCONSIN.																					
Appleton.....	High School.....	E	48	48	48	48	.....	0	.....	.....	P. C.	.....	.....	.....	.....	.....	600	25	0	X	300
Arcadia.....	do.....	E	42	42	.....	.....	0	0	.....	.....	P. V.	.....	.....	.....	.....	.....	.....	.....	.....	X	300
Athens.....	do.....	R	.....	.....	.....	.....	X	0	540	N.	P.	.....	.....	.....	.....	.....	10	12	.....	X	125
Avoca.....	do.....	.....	.....	.....	.....	.....	0	0	.....	.....	V.	.....	.....	.....	.....	.....	.....	.....	.....	X	25
Bangor.....	do.....	E	.....	.....	.....	.....	0	0	.....	.....	P. C. V.	.....	.....	.....	.....	.....	10	.....	.....	X	20
Beaver Dam.....	do.....	E	.....	.....	.....	.....	X	0	750	A. N.	.....	.....	.....	.....	.....	.....	100	0	.....	X	100
Beloit.....	do.....	{R 1 E 1}	108	108	0	0	0	0	.....	.....	P.	.....	.....	.....	.....	.....	100	.....	0	.....	.....
Black River Falls.....	do.....	E	.....	.....	.....	.....	0	0	.....	.....	V.	.....	.....	.....	.....	.....	50	30	.....	X	600
Boscobel.....	do.....	E	24	24	.....	.....	0	0	.....	N.	P.	.....	.....	.....	.....	.....	5	0	0	X	100
Cambridge.....	do.....	R	20	20	36	36	0	0	675	N.	P. C.	.....	.....	.....	.....	.....	.....	.....	.....	X	100
Chippewa Falls.....	do.....	R, E	.....	.....	.....	.....	X	0	.....	.....	C.	.....	.....	.....	.....	.....	400	12	.....	X	600

1 One trained in normal school, two in universities.

TABLE IV.—Drawing in public high schools—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in the art library.	Value of school art museum, reference material, etc.	Art decorations in school-rooms?	Cost of such decorations.	
													School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.
			First year.	Second year.	Third year.	Fourth year.																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
WISCONSIN—contd.																								
Clintonville.....	High School.....	R	114	114	0	0	0	0			P.		X	0	0	0	0	X	0	\$100	10		X	\$300
Columbus.....	do.....	E						0			V.	X						X						
Cumberland.....	do.....	E	72	36	36	36	0	0												50	25		X	100
Darien.....	do.....	R					X	0	\$675	A.	C.	0	X							20	12		X	50
Elkhorn.....	do.....	R	60	60	60	60	0	0			P. C.	0	X							15	0		X	25
Friendship.....	do.....							0					X					X						
Green Bay.....	East High School.....	E						0	1,050	A. N.	P.	0	X					X						
Do.....	West High School.....						X	0			P. V.	0	X					X		300	22	\$75	X	350
Hayward.....	High School.....	R	54	54	0	0	0	0				X	0	0	0	0	0	X		100	0	0	X	300
Kaukauna.....	do.....	R																						
Kenosha.....	do.....	R						0			P.	0												
La Crosse.....	do.....	R, E	60	60	60	60	X	0	750	A.	P. C. V.	X	X		X	X		X		400			X	300
Lake Geneva.....	do.....	R						0				X								75			X	500
Marquette.....	do.....	R	48	48	48	48	0	0			P. V.		0	0	0	0	0	X		275			X	500
Mattoon.....	do.....	R	45	45	45	45	0	0					X										X	300
Medford.....	do.....	R	54	54			X	0	675	A.	C.	0	X					X		50	50	0	X	60
Menominee.....	do.....	R, E	60	60	60		X	0	810		P. C.	0	X										X	500
Merrill.....	do.....	E	150	150			X	X	800	A.	P. C.	X	X		X	X	X	X		100	20		X	50
Milwaukee.....	East Division High School.....	E	133	133			X	0	980	A.	P. C.	X	X	0	X	0	0	0	0	500	100		X	600
Do.....	North Division High School.....	R	150	150	150	150	X	0	1,080	N.	P.	X	X	0	X	0	X	0	X	200	16		X	800
Do.....	South Division High School.....	E					X	0	{1,200}	A. N.	C.	X	X	X	X	0	X	X	0	1,000			X	5,000
Do.....	West Division High School.....	R, E	150	150	150	150	X	0	{1,380}	A. N.	P. C. V.	X	X	X	X	X	X	X	X	1,150	35	500	X	1,000
Mount Horeb.....	High School.....	R, E	135	135		54		0			V.	0	X		X			X		150		0	X	100
Mukwonago.....	do.....	R	111	111				0			P. C. V.		X										X	175
Neenah.....	do.....	E	111	111			X		1,260		P. C. V.	X	X					X		700	35		X	2,500

[illegible]

CALIFORNIA.									
Belmont.....	E	360	238	380	120	120	120	120	120
Berkeley.....	R, E	108	108	108	108	108	108	108	108
Do.....	E	0	216	216	216	216	216	216	216
Burlingame.....	E	36	36	36	36	36	36	36	36
Lordsburg.....	E	360	360	360	360	360	360	360	360
Los Angeles.....	E	140	140	140	140	140	140	140	140
Do.....	E	400	400	400	400	400	400	400	400
Los Gatos.....	E	400	400	400	400	400	400	400	400
Harvard School.....	E	405	405	405	405	405	405	405	405
Westlake School for Girls.....	R, E	675	675	675	675	675	675	675	675
Monterey Mountain Ranch School.....	R	840	840	840	840	840	840	840	840
Castilleja School.....	E	120	120	120	120	120	120	120	120
Harker's (Miss) School for Girls.....	R, E	108	108	108	108	108	108	108	108
Manzanita Hall.....	R	36	36	36	36	36	36	36	36
Orton School.....	E	36	36	36	36	36	36	36	36
College of Notre Dame.....	R	27	27	27	27	27	27	27	27
Elizabeth Marston School.....	E	40	40	40	40	40	40	40	40
St. Agnes Presentation Acad-emy.....	R	160	160	160	160	160	160	160	160
St. Vincent's School.....	R	120	120	120	120	120	120	120	120
San Francisco University School for Boys.....	E	120	120	120	120	120	120	120	120
Trinity School.....	R, E	0	135	135	135	135	135	135	135
Hitchcock Military Academy.....	E	107	107	107	107	107	107	107	107
Mt. Tamalpais Military Acad-emy.....	R	0	180	0	0	0	0	0	0
Hicks School.....	E	64	64	64	64	64	64	64	64
Moreland Notre Dame Acad-emy.....	R	80	80	80	80	80	80	80	80
Loretto Heights Academy.....	R	50	50	50	50	50	50	50	50
Hargrove School.....	E	54	54	54	54	54	54	54	54
Brunswick School.....	E	54	54	54	54	54	54	54	54
Ely School for Girls.....	E	54	54	54	54	54	54	54	54
Greenwich Academy.....	R	54	54	54	54	54	54	54	54
Rosemary Hall.....	R	54	54	54	54	54	54	54	54
Oxford School.....	E	54	54	54	54	54	54	54	54
Academy of Our Lady of Mercy.....	R	54	54	54	54	54	54	54	54
Miss Johnstone's School.....	R	54	54	54	54	54	54	54	54
Williams Memorial Institute.....	E	54	54	54	54	54	54	54	54
Harstom School.....	E	54	54	54	54	54	54	54	54
Hillside School.....	R	54	54	54	54	54	54	54	54
Norwich Free Academy.....	E	144	144	144	144	144	144	144	144
Sanford School.....	R	54	54	54	54	54	54	54	54
Law (Miss) and Heywood's (Miss) School for Girls.....	E	54	54	54	54	54	54	54	54
COLORADO.									
Loretto.....	R	50	50	50	50	50	50	50	50
CONNECTICUT.									
Fairfield.....	E	50	50	50	50	50	50	50	50
Greenwich.....	E	50	50	50	50	50	50	50	50
Do.....	E	50	50	50	50	50	50	50	50
Do.....	R	50	50	50	50	50	50	50	50
Do.....	R	50	50	50	50	50	50	50	50
Hartford.....	R	50	50	50	50	50	50	50	50
Milford.....	E	50	50	50	50	50	50	50	50
New Haven.....	R	50	50	50	50	50	50	50	50
New London.....	E	50	50	50	50	50	50	50	50
Norwalk.....	E	50	50	50	50	50	50	50	50
Do.....	R	50	50	50	50	50	50	50	50
Norwich.....	E	50	50	50	50	50	50	50	50
Redding Ridge.....	R	50	50	50	50	50	50	50	50
Standford.....	E	50	50	50	50	50	50	50	50

TABLE V.—Drawing in private high schools and academies—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in art library.	Value of school art museum, reference material, etc.	Art decorations in school rooms?	Cost of such decorations.
			Hours per year devoted to drawing.										School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
			First year.	Second year.	Third year.	Fourth year.																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
CONNECTICUT—con.																								
Stamford	Manor School.	E									V.	X												
Suffield	Connecticut Literary Institution.	E				162					P.													
Wallingford	Cheate School for Boys.	E					X			A.	P. C.	X												
Do.	Phelps School for Girls.	E					X			A.	P. C.													
Washington	Gunnery School.	E	72	54	54		X		\$600	A.	P. C. V.	X	X		X	X							X	
Do.	Ridge School for Boys.	E	36																					
Windsor	Campbell School for Girls.	E					X	X		A.	P. C. V.		X	0	X	X	0	0	0	\$500	100		X	\$1,500
Winsted	Gilbert School.	R, E	24	24	24	24					P. V.	X		X				X					X	
DELAWARE.																								
Dover	Wilmington Conference Academy.	R			120		X	0	400	A.	P. C. V.		X	X	X			X		200			X	
DIST. COLUMBIA.																								
Washington	Chevy Chase Seminary.	E					X			A. N.	P. C.							X						
Do.	Holton-Arms School.	E					X	X	400		P. C.	0	X	0	0	0	X			300			X	1,000
Do.	Madeira's (Miss) School for Girls.	E	48	48	48	48	X	0	250	A.	P. C.								500	200	0	0	X	1,000
Do.	Washington Foreign Mission Seminary.	R					X	0		A.	C.	0	X						10	0				
Do.	Washington Seminary.	E					X																	
FLORIDA.																								
Jacksonville	Cookman Institute (negro).	R									P.		X											
Do.	Florida Military Academy.	E																						
Key West	Convent of Mary Immaculate.	E	72	80	80	80	X	X		A. N.	P. C. V.	X	X	X	X	X	X	X		700	100	\$600	X	250

Orlando.....	Cathedral School for Girls.....	90	80	70	60	50	40	30	20	10	5	0	100	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500	2,000	250	200	300	400	500	600	700	800	900	1,000	1,500
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State	School	Boys	Girls	Total	Value	Books	Other	Notes
KANSAS	Eureka	180	72	252	135	216	216	E
	Leavenworth	180	72	252	135	216	216	E
	Newton	180	72	252	135	216	216	E
	Oswego	180	72	252	135	216	216	E
KENTUCKY	Covington	80	40	120	40	40	40	E
	Jackson	72	72	144	72	72	72	E
	London	72	72	144	72	72	72	E
	Louisville	72	72	144	72	72	72	E
LOUISIANA	Alexandria	20	24	44	24	30	30	E
	Covington	20	24	44	24	30	30	E
	Franklin	20	24	44	24	30	30	E
	Grand Coteau	20	24	44	24	30	30	E
MAINE	Barnstable	108	108	216	108	108	108	E
	Barnstable	108	108	216	108	108	108	E
	Barnstable	108	108	216	108	108	108	E
	Barnstable	108	108	216	108	108	108	E
MARYLAND	Baltimore	36	36	72	36	36	36	E
	Baltimore	36	36	72	36	36	36	E
	Baltimore	36	36	72	36	36	36	E
	Baltimore	36	36	72	36	36	36	E

TABLE V.—Drawing in private high schools and academies—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work, practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in art library.	Value of school art museum, reference material, etc.	Art decorations in school rooms?	Cost of such decorations	
													School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
			First year.	Second year.	Third year.	Fourth year.																			
1	2	3	4	5	6	7		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
MARYLAND—con.																									
Baltimore	Friends' School	R	108	108	72	72	X	X	\$200	A.	P. V.	X	X	X						\$25	12	\$15	X	\$35	
Do	Girls' Latin School	R	36				X	X		A.	P.	X	X												
Catonsville	Mount De Sales Academy of the Visitation	E	90	90	180	180	X			A.	P.		X												
Colors	West Nottingham Academy	R					X			A.	P. C.		X												
La Plata	McDonough Institute	R	30	30	30	30	X		350	A.	P. C.		X							10	12	50	X		
McDonogh	McDonough School	R	60	108	108		X			A.	P.	X	X							200			X		
Mount Washington	Mount St. Agnes College	E	36	36	36	36	X			N.	P.	X	X										X		
Port Deposit	Tome Institute	R, E	48	48	48	48	X		850	A.	P.	X	X							800	90	700	X	500	
Roland Park	Roland Park Country School		36	36	36	36					C.	X											X		
MASSACHUSETTS.																									
Andover	Phillips Academy	E	0	0	0	66	0				C. C. V.												X	1,000	
Ashburnham	Cushing Academy	R	47	47	47		X		600	A.	P. C. V.	X								300	30	100	X		
Boston	Boston Academy of Notre Dame	R	40	20	20	0	0				P. C.		X								100				
Do	Church's (Miss) School	E	27	27	54	54	X			A.	P. C.		X								250				
Do	Cumming's (Miss) School	R, E	0	27	27	27	X			A.	C.												X		
Do	Curtis-Peabody School	E					X				C.												X		
Do	Haskell's (Miss) School	E	27	27	27	27	X			A.													X		
Do	Mays' (Misses) School	R	27	27	27	27	X			A.										100			X		
Do	Weston School for Girls	R	30	30	30	30	X			A.	P. C.		X								25	200	X		
Do	Winsor School	R	20	20	20	20	X			A.	P. C. V.		X										X		
Brewster	Sea Pines Home School for Girls	E					X		650		P. C. V.	X	X						X	200	25		X		
Concord	Middlesex School	R	36	36	0	0	0				P.	X	X							100	15				
Duxbury	Partridge Academy and Duxbury High School	{ R 1 E 3	27	27	27	27	X		450	A.	P. C.		X										X		
Easthampton	Williston Seminary	R		108	108	144	X		1,200	N.	P. V.	X								200	0	1,800	X		

School	Grades	Boys	Girls	Total	Value	Books	Other	Notes
East Northfield	27	36	72	108	108	108	108	
Fall River	36	72	72	144	144	144	144	
Do.	40	40	40	80	80	80	80	
Groton	76	26	108	134	134	134	134	
Harvard	108	108	108	216	216	216	216	
Elmhurst	72	72	72	144	144	144	144	
Marlboro	72	72	72	144	144	144	144	
Milton	72	72	72	144	144	144	144	
Natick	36	36	36	72	72	72	72	
New Bedford	72	72	72	144	144	144	144	
Northampton	72	72	72	144	144	144	144	
Do.	30	30	30	60	60	60	60	
Norton	54	54	54	108	108	108	108	
Quincy	72	72	72	144	144	144	144	
Shelfield	40	40	40	80	80	80	80	
Springfield	72	72	72	144	144	144	144	
Wellesley Hills	40	40	40	80	80	80	80	
West Bridgewater	72	72	72	144	144	144	144	
West Newton	36	36	36	72	72	72	72	
Wollaston	81	81	81	162	162	162	162	
Worcester	36	36	36	72	72	72	72	
MICHIGAN								
Bay City	36	36	36	72	72	72	72	
Barren Springs	36	36	36	72	72	72	72	
Big Rapids	36	36	36	72	72	72	72	
Eastville	18	18	18	36	36	36	36	
Traverse City	18	18	18	36	36	36	36	
MINNESOTA								
Duluth	72	72	72	144	144	144	144	
Do.	60	60	60	120	120	120	120	
Faribault	27	27	27	54	54	54	54	
Minneapolis	27	27	27	54	54	54	54	
Red Wing	108	108	108	216	216	216	216	
St. Joseph	135	135	135	270	270	270	270	
St. Paul	40	40	40	80	80	80	80	
Do.	40	40	40	80	80	80	80	
MISSOURI								
Bay St. Louis	90	90	90	180	180	180	180	
Bliss Mountain	40	40	40	80	80	80	80	
Brookhaven	135	135	135	270	270	270	270	
Meridian	135	135	135	270	270	270	270	

TABLE V.—Drawing in private high schools and academies—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in art library.	Value of school art museum, reference material, etc.	Art decorations in school rooms?	Cost of such decorations.	
			Hours per year devoted to drawing.										School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.						
			First year.	Second year.	Third year.	Fourth year.																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
NEW YORK—contd.																									
Binghamton.....	St. Patrick's Academy.....	R	80	80	120	80	X	0	.....	A.	P. C.	X	X	0	0	0	0	0	X	\$50	25	.....	X	\$75
Briarcliff Manor.....	Dow's (Mrs.) School.....	E	120	120	240	240	X	.....	\$225	.....	P. C.	.....	X	0	0	0	0	0	0	75	100	.....	0	.....
Brooklyn.....	Berkeley Institute.....	E	.....	.....	.....	.....	X	X	900	.....	P. C.	.....	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Do.....	Brooklyn Heights Seminary.....	R, E	.....	.....	.....	.....	X	X	800	.....	P. C.	0	X	.....	.....	.....	.....	.....	.....	.....	50	.....	X	.....
Do.....	Friends School.....	R	45	45	45	45	X	X	{1000- (1,500)	P. C.	0	X	0	X	X	X	0	0	0	2,000	500	0	X	1,000
Do.....	Packer Collegiate Institute.....	E	.....	.....	.....	.....	X, 3	X	300	A.	P. C.	0	X	0	0	0	0	0	0	30	.....	.....	X	.....
Do.....	Prospect Heights School.....	R	54	54	54	54	X	X	.....	.....	P. C.	0	X	0	0	0	0	0	0	.....	.....	.....	X	.....
Do.....	Round's (Miss) School for Girls.....	R, E	.....	.....	.....	.....	X	X	.....	.....	P. C.	0	X	0	0	0	0	0	0	.....	.....	.....	X	.....
Do.....	St. Francis Xavier's Academy.....	R	.....	.....	.....	.....	X	X	300	.....	P. C.	0	X	.....	.....	.....	.....	.....	.....	.....	85	.....	X	136
Buffalo.....	Mount Mercy Academy.....	R	54	54	54	54	X	0	.....	A.	P. C.	0	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Do.....	Nichols School.....	{ R 1 E 3	81	.....	.....	.....	X	0	.....	A.	P. C.	0	X	0	0	0	0	0	0	.....	.....	.....	X	.....
Do.....	St. Margaret's School.....	R	54	54	54	0	X	X	400	A.	C. V.	0	X	.....	X	.....	.....	.....	.....	1,000	50	.....	X	.....
Carmel.....	Drew Seminary for Young Women.....	E	.....	.....	.....	.....	X	X	300	A.	C.	0	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Cazenovia.....	Cazenovia Seminary.....	E	.....	.....	.....	.....	X	0	.....	A.	P. V.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
College Point.....	Poppenhusen Institute.....	E	.....	.....	.....	.....	X, 3	0	.....	A.	P.	.....	.....	.....	.....	.....	.....	.....	.....	500	50	1,700	X	.....
Do.....	St. Agnes Academy.....	E	81	81	108	108	X	X	.....	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cornwall - on - the Hudson.....	New York Military Academy.....	E	180	180	180	180	X	.....	900	N.	P.	.....	.....	0	0	0	0	0	0	500	0	0	0	.....
Croghan.....	Father Leo Memorial School.....	R	30	30	35	35	0	0	.....	.....	P. C.	0	X	.....	X	.....	.....	.....	.....	60	12	15	.....	.....
Dobbs Ferry.....	The Misses Masters' School.....	E	.....	.....	.....	.....	X	X	1,000	A.	P. C.	0	X	.....	X	.....	.....	.....	.....	1,000	250	.....	X	.....
Dunkirk.....	St. Mary's Academy.....	R	135	.....	.....	.....	0	0	.....	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Flushing.....	Kyle Institute.....	R	144	144	144	108	0	0	.....	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	50	.....	.....	X	200
Hartwick Seminary.....	Hartwick Seminary.....	E	36	36	.....	.....	0	0	.....	.....	P. C.	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....
Houghton.....	Wesleyan Methodist Seminary.....	R, E	68	68	.....	.....	0	0	.....	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X	.....
Hudson.....	St. Mary's Academy.....	R	144	108	72	36	0	0	.....	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	200	40	150	X	200
Keseeville.....	St. Stanislaus Academic School.....	E	54	54	.....	.....	0	0	.....	.....	P.	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	5	X	10

[illegible]

TABLE V.—Drawing in private high schools and academies—Continued.

[illegible]

Grand Forks. New Bedford.....	R E	St. Bernard's Academy. Collegiate Institute.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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TABLE V.—Drawing in private high schools and academies—Continued.

Location.	Names of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—						Approximate cost of drawing equipment.	Volumes in art library.	Value of school art material, etc.	Art decorations in school rooms?	Cost of such decorations.	
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.						Local activities.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
PENNSYLVANIA—continued.	Nazareth	R I	80	0							P.		0	0	0	0	0	0	0				X	
	Philadelphia	E	81	81	81	81							X	X						\$3,000	20		X	
	Do.	E					X		850	A.	P. C. V.	X	X	0	0	0	0	X				X		
	Do.	R	54	54	54	54	X		1,300	A.	P. C.	X	X	X	X	X	X	X		1,000	25	X	\$1,000	
	Do.	E	54	54	54	54	X		500	A.	P. C. V.	X	X	X	X	X	X	X		1,000	0	X	1,200	
	Do.	R	48	48	48	48	X		200	A.	P. C.	X	X	0	0	0	0	0		200	0	X		
	Do.	E	36	36	36	36	X			A.	P. C. V.	X	X	0	0	0	0	0		50	30	X	500	
	Do.	R	48	48	48	48	X			A.	P. C. V.	X	X	X	X	X	X	X		300	0	X		
	Do.	E	60	60	60	60	X		144	A.	P. C. V.	X	X	X	X	X	X	X			0	X		
	Do.	R	27	27	27	27	X		600	A.	P. C. V.	X	0	0	0	0	0	0			0	X		
	Do.	R	72	180	180	180	X		1,000	A.	P. C. V.	X	X	X	X	X	X	X		700		X	2,000	
	Do.	school	E	54	54	54	54	X		1,000	A.	P. C.	X	X	0	0	0	0	X		800	0	X	
	Pittsburgh.	school	E	72	72	72	108	X			A.	P. C.	X	X	0	0	0	0	0				X	
	Do.	Do.	E	135	135			X			A.	P.	X	X	0	0	0	0	0				X	
	Do.	Do.	E	0	100			X			A.	P.	X	X	0	0	0	0	0		750		X	1,000
Do.	Thurston (George H.) School.	R	0				0				P.	X	X	0	0	0	0	0				X		
Pottstown.	Hill School.	{ R 3 } { E 1 }	18	18	18	72	0	X			P. V.	X	0	0	0	0	0	0		2,500	1,000	X		
Scranton.	Holy Rosary Academy.	R	54	54	54	54	X			A.	P. C.	X	X	X	X	X	X	X				X		
Sharon Hill.	Academy of the Holy Child Jesus.	R	85	85	85	85	X			A.	P. C.	X	X	X	X	X	X	X				X		
South Bethlehem.	Blasphorthe Manor.	E					X		450	A.	P. C.	X	X	X	X	X	X	X			25	X		
Washington.	Washington Seminary.	R					X			A.	P.	X	X	X	X	X	X	X				X		

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TABLE V.—Drawing in private high schools and academies—Continued.

Location.	Name of high school.	Required or elective?	Hours per year devoted to drawing.				Special teacher employed?	Is he supervisor of drawing in the grades?	Salary of high-school drawing teacher.	His training.	Work practical, cultural, or vocational?	Mechanical and free-hand drawing separate courses?	Drawing applied to—							Approximate cost of drawing equipment.	Volumes in art library.	Value of school art museum, reference material, etc.	Art decorations in school rooms?	Cost of such decorations.
			First year.	Second year.	Third year.	Fourth year.							School work.	Metal craft.	Leather craft.	Textile craft.	Pottery craft.	Wood craft.	Local activities.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
UTAH.	Summit Stake Academy.....	E	135					0			P.	0	X	X				X			25		X	
	Brigham Young College.....	R, E	180	0	0	108	X	X	\$650	N.	P. C. V.	X	X	X	0			X		\$75			X	
	Weber Academy.....	R, E	135	135			X		800	N.	P. C. V.	X	X	0	0	X	X	X	X	300	50		X	\$300
VERMONT.	Troy Conference Academy.....	R	80				X		350	A.	P. C. V.	X	X		X	X				300	25		X	100
	Mount St. Joseph's Academy..	R	36	36	36	36																		
	Vermont Academy.....	{ R ² E ¹ }			135			0			P.							X		200	55		X	
VIRGINIA.	St. Anne's Episcopal School....	E					X		300	A.	C.									200	12		0	
	Southside Female Institute....	E					X	X	400	A.	C. C. V.		X		X	X				100				
	Chatham Episcopal Institute..	R	37	37	37	37	X	X	600	A. N.	P. C. V.	X	X	X	X	X	X	X	X	300	75	\$200	X	50
	Gloucester Academy.....	E	72	72	72	72	X		500															
	Herndon Seminary.....	E						0																
	Northern Neck Industrial Academy (Negro). ..	R			48			0			P. C.	0	X								12		X	
	Corinth Academy.....	R	54	54	54	54		0			P.		X				X							
	Shenandoah Valley Academy..	E																						
	Oak Park Institute.....	E	45	45	45	45		0	600	A.		0	X						X	50		X		
	St. Joseph's Academy.....	E	72	72	72	72	X	X			A. N.	P. C. V.		X	X	X	X	X	X				X	
WOODSTOCK.	Stuart Hall.....	E	36				X						X		X	X	X	X		500	25		X	
	Woodberry Forest School.....	E	204				X						X											
	Massanutten Academy.....	E			72	108	X	X	900	N.	P.	X	X											
	Berwick School for Girls.....	R	54	54	54	54	X	X		A.	P.	X	X							100	20		X	

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- No. 60. Statistics of State universities and other institutions of higher education partially supported by the State, 1912-13.

1914.

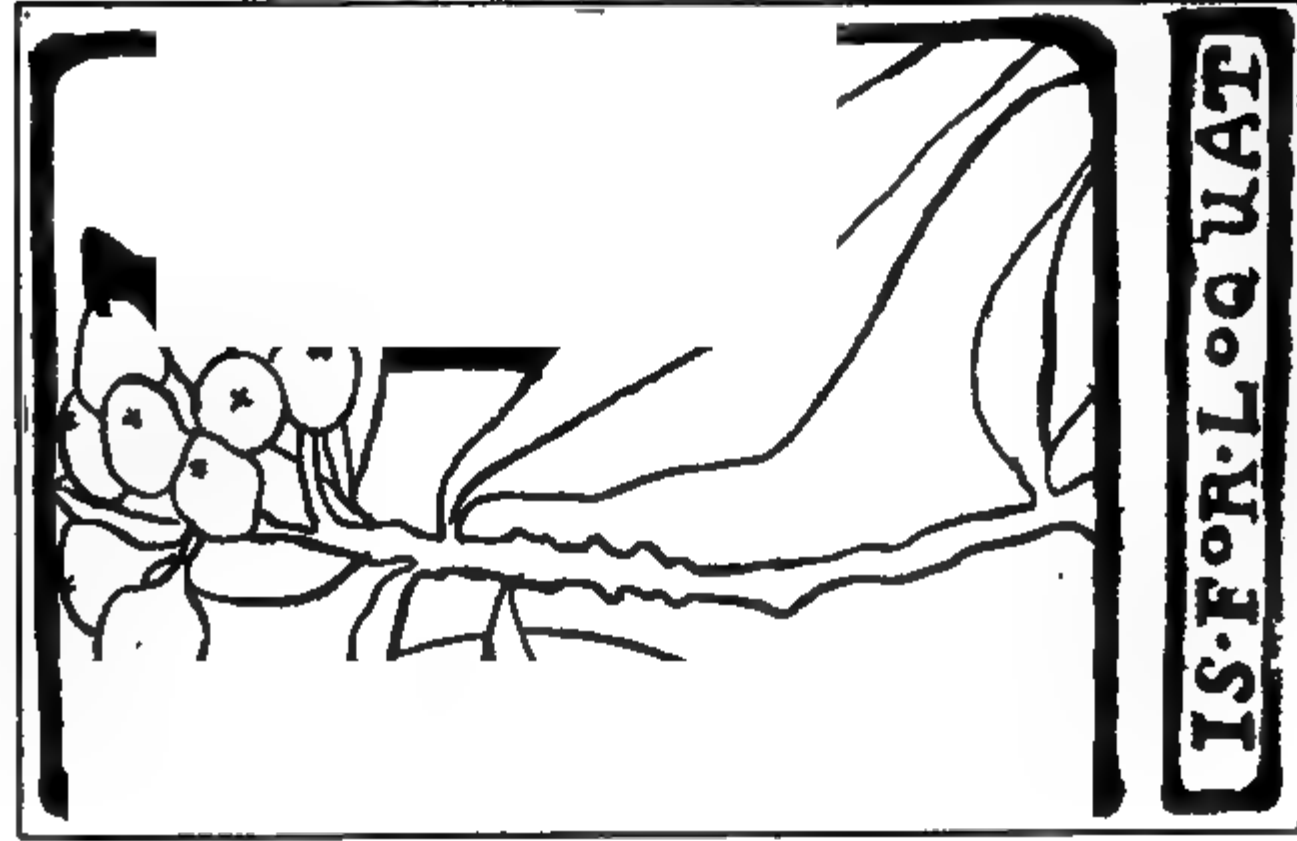
- *No. 1. Monthly record of current educational publications, January, 1914. 5 cts.
- No. 2. Compulsory school attendance.
- *No. 3. Monthly record of current educational publications, February, 1914. 5 cts.
- No. 4. The school and the start in life. Meyer Bloomfield.
- No. 5. The folk high schools of Denmark. L. L. Friend.
- No. 6. Kindergartens in the United States.
- No. 7. Monthly record of current educational publications, March, 1914.
- No. 8. The Massachusetts home-project plan of vocational agricultural education. R. W. Stimson.
- No. 9. Monthly record of current educational publications, April, 1914.
- No. 10. Physical growth and school progress. B. T. Baldwin.
- No. 11. Monthly record of current educational publications, May, 1914. .
- No. 12. Rural schoolhouses and grounds. F. B. Dresslar.



SKETCHING FROM LIFE MODEL, WASHINGTON IRVING HIGH SCHOOL, NEW YORK CITY.

A. DRAWING, SIXTH GRADE, LOS ANGELES.

B. LANDSCAPE—NATURE—COMPOSITION, EIGHTH GRADE, LOS ANGELES.



A. DRAWING, SIXTH GRADE, LOS ANGELES.

B. STUDIES IN PERSPECTIVE, SEVENTH GRADE, LOS ANGELES.

BUREAU OF EDUCATION

BULLETIN, 1914, NO. 13 PLATE 4

A. NATURE DRAWING, LOS ANGELES.

B. NATURE COMPOSITION, EIGHTH GRADE, LOS ANGELES.

A. CONSTRUCTION WORK, THIRD TO SIXTH GRADE, MINNEAPOLIS.

B. BOGUS CONSTRUCTION, ST. LOUIS PUBLIC SCHOOLS.

First year, age 7; 50 in class; 2 periods on problem.

A. PORTFOLIOS, THIRD YEAR, ST. LOUIS PUBLIC SCHOOLS.

Age 9; 50 in class; 6½ hours on problem.

B. CARDBOARD CONSTRUCTION, SEVENTH YEAR, ST. LOUIS PUBLIC SCHOOLS.

Age 12 years, 45 in class; 8½ hours on problem.

A. CONSTRUCTION WORK, FOURTH YEAR, ST. LOUIS PUBLIC SCHOOLS.

Age 10; 50 in class; 6½ periods on problem.

B. CONSTRUCTION WORK, FIFTH YEAR, ST. LOUIS PUBLIC SCHOOLS.

Age 11; 50 in class, 7 periods on problem

CROSS STITCH, APPLIED DESIGN, SEVENTH GRADE, LOS ANGELES.

BUREAU OF EDUCATION

BULLETIN, 1914, NO. 13 PLATE 10

STENCILS AND APPLICATIONS, SEVENTH GRADE,
LOS ANGELES.

A. SURFACE DESIGNS, GRADES VI, VII, VIII, SAN FRANCISCO.

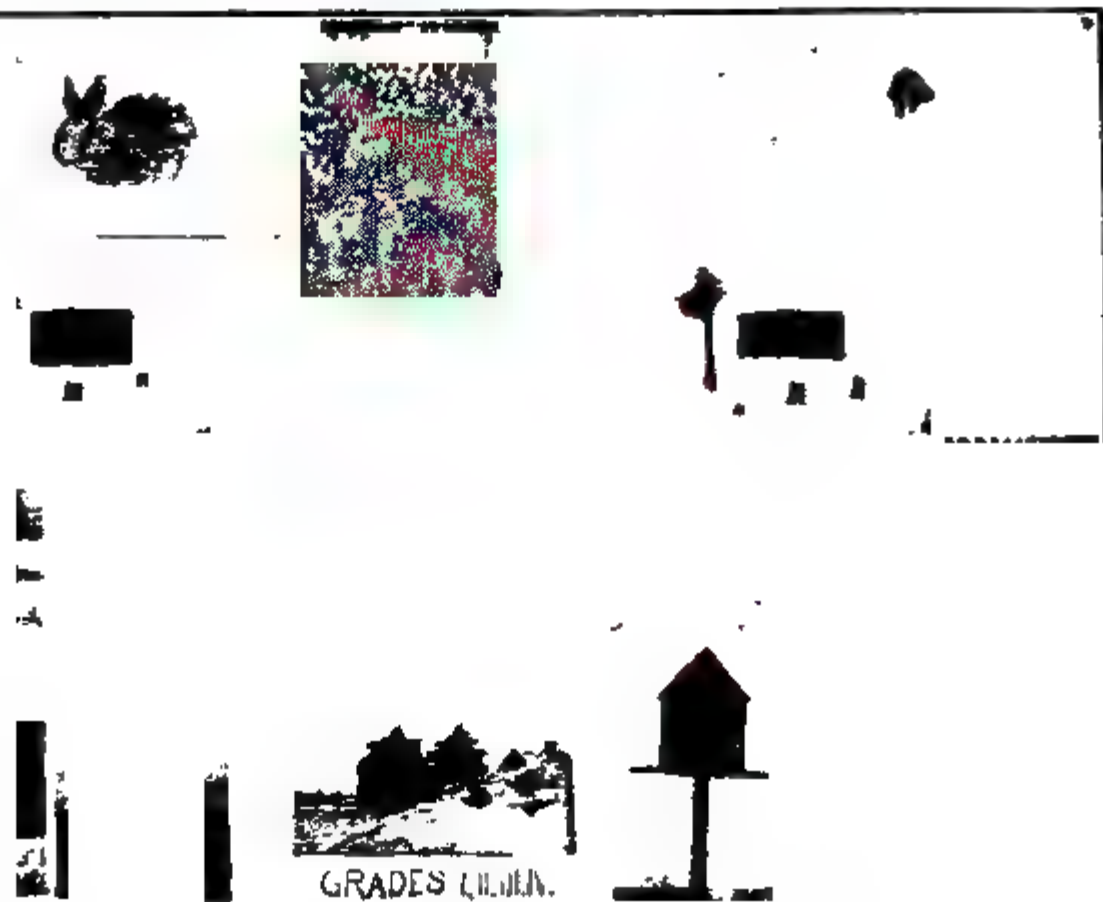
B. CONSTRUCTIVE AND DECORATIVE DESIGNS, SEVENTH AND EIGHTH GRADES,
SAN FRANCISCO.

**A. LETTERING AND CONSTRUCTION OF BOOKLETS, EIGHTH YEAR, ST. LOUIS
PUBLIC SCHOOLS.**

Age 14, 45 in class; 6½ periods on problem.

B. CARDBOARD CONSTRUCTION, EIGHTH YEAR, ST. LOUIS PUBLIC SCHOOLS.

Age 14, 45 in class; 6 hours on problem.



A. RURAL SCHOOL DRAWING, GRADES I, II, III, IV, BARNSTABLE, MASS.

B. RURAL SCHOOL DRAWING, HIGH SCHOOL DEPARTMENT, BARNSTABLE, MASS.

A. SAND TABLE—SPRINGTIME ON THE FARM.

Genetic construction and clay. Elementary grades. State Normal School, Buffalo, N. Y.

B. SAND TABLE—AN ESKIMO VILLAGE.

Elementary grades. Colored crayon background; clay and cotton. State Normal School,
Buffalo, N. Y.

A. SAND TABLE—MAPLE SUGAR CAMP.

Elementary grades, State Normal School, Buffalo, N. Y.

B. ELEMENTARY GRADES STATE NORMAL SCHOOL, BUFFALO N. Y.

Illustrating breakwater and shore, with typical industries.

C. SAND TABLE WORK—ELEMENTARY GRADE PUPILS, WINTHROP NORMAL AND INDUSTRIAL COLLEGE, SOUTH CAROLINA.

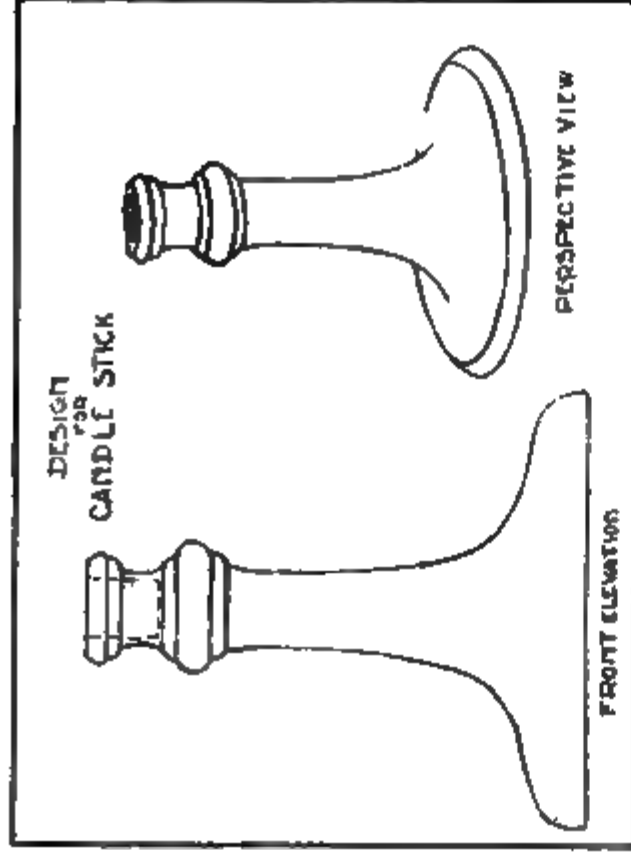
A. FIRST GRADE CLAY WORK, NEWMAN MANUAL TRAINING
SCHOOL, NEW ORLEANS.

B. SECOND GRADE INDIAN POTTERY, NEWMAN MANUAL
TRAINING SCHOOL, NEW ORLEANS.

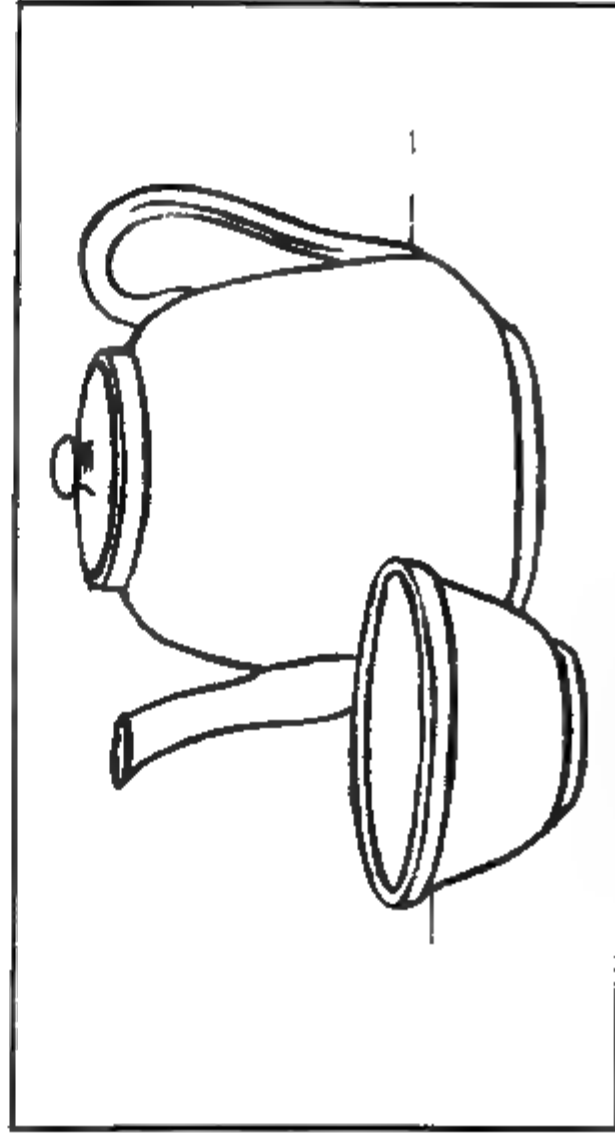
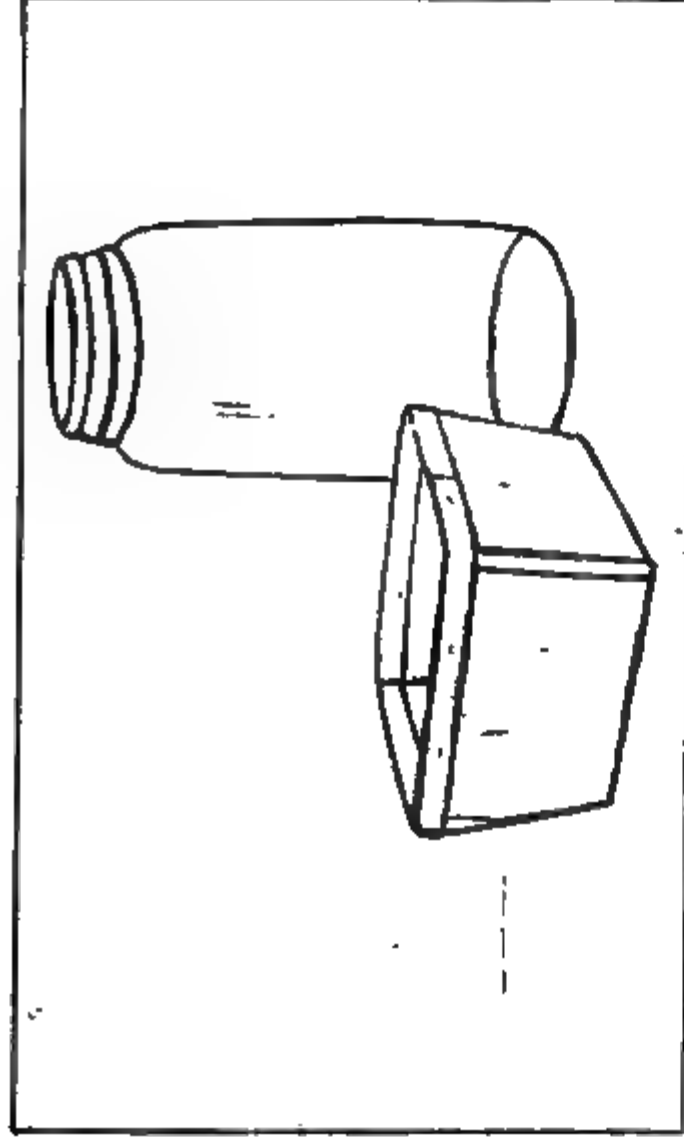
B. FIFTH AND SIXTH GRADE POTTERY, NEWMAN MANUAL TRAINING SCHOOL,²²
NEW ORLEANS.

4. MODELING, SIXTH GRADE, MINNEAPOLIS PUBLIC SCHOOLS.

B. GRADE WORK IN DESIGN, BOSTON.



4. REPRESENTATION OBJECT DRAWING, ACCENTED OUTLINE, SECONDARY SCHOOLS, NEW YORK STATE.
(Courtesy of University of State of New York.)

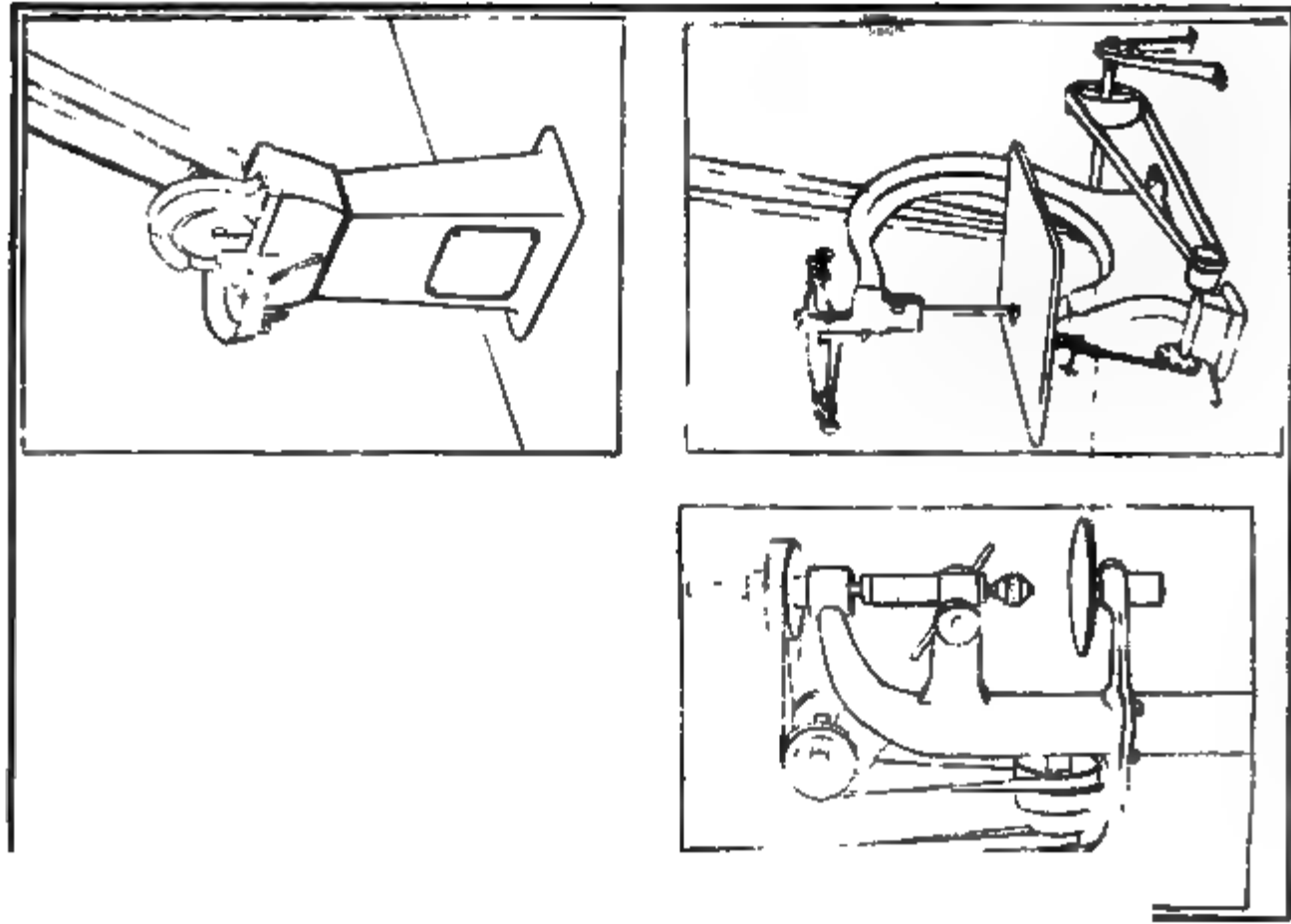


B. REPRESENTATION OBJECT DRAWING, ACCENTED OUTLINE, SECONDARY SCHOOLS, NEW YORK STATE.
(Courtesy of University of State of New York.)

BUREAU OF EDUCATION

BULLETIN, 1914, NO. 11 PLATE 22

REPRESENTATION OBJECT DRAWING. SUGGESTED LIGHT AND SHADE. SECONDARY SCHOOLS. NEW YORK STATE.
(Courtesy of University of State of New York.)



A. PROBLEMS SKETCHED BY PUPILS FROM VARIOUS SHOPS; TWO YEARS, STUYVESANT HIGH SCHOOL, NEW YORK.

B. PROBLEMS IN CONSTRUCTIVE DESIGN FOR DEVELOPMENT IN SHOPS; FIRST YEAR, STUYVESANT HIGH SCHOOL, NEW YORK.

A. REPRESENTATION DRAWING, WASHINGTON IRVING
HIGH SCHOOL, NEW YORK.
Introductory exercises in ink and color technic, two years high
school; first half (one year of industrial art course).

B. DESIGN, WASHINGTON IRVING HIGH SCHOOL, NEW YORK.
Original adaptations of motifs taken from flowers and prepared specimens,
19 periods per week; two high school years; second half

A. LEATHER WORK. HIGH SCHOOL, MINNEAPOLIS.

B. TOOLED LEATHER MAT. CENTRAL HIGH SCHOOL, SPRING-
FIELD, MASS.

2. APPLIED DESIGN; ALL YEARS. CENTRAL HIGH SCHOOL, SPRINGFIELD, MASS.

B TOOLED LEATHER WORK. AGE 17; 24 IN CLASS; 14 PERIODS ON PROBLEM,
ST. LOUIS.

ORIGINAL DESIGNS IN EMBROIDERY APPLIED TO SHIRTWAISTS AND TABLE
COVERS, HIGH SCHOOL, LOS ANGELES.

**A. APPLIED DESIGN. STENCIL WORK, FIRST YEAR. TECHNICAL HIGH SCHOOL,
SPRINGFIELD, MASS.**

**B. STENCILED PILLOWS, FIRST YEAR. NEW TRIER TOWNSHIP HIGH SCHOOL,
KENILWORTH, ILL.**

A. STENCIL DESIGN ON CRASH. CENTRAL HIGH SCHOOL, SPRINGFIELD, MASS.

B. BLOCK PRINT AND EMBROIDERY. CENTRAL HIGH SCHOOL, SPRINGFIELD, MASS.

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APPLIQUÉ CUSHION, CENTRAL HIGH SCHOOL, SPRINGFIELD, MASS.

A. CUT STENCIL, CENTRAL HIGH SCHOOL, SPRINGFIELD, MASS.

B. TAPESTRY DESIGN, CENTRAL HIGH SCHOOL, SPRINGFIELD, MASS.

B. ORIGINAL DESIGN FOR TAPESTRY MADE INTO A SERVING TRAY. CENTRAL
HIGH SCHOOL, SPRINGFIELD, MASS.

BUREAU OF EDUCATION

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EMBROIDERED BAG. CENTRAL HIGH SCHOOL, SPRINGFIELD, MASS.

4. BLOCK PRINT AND EMBROIDERY ON BAG DESIGN. CENTRAL HIGH SCHOOL,
SPRINGFIELD, MASS.

4. ORIGINAL DESIGN IN EMBROIDERY APPLIED TO SHIRTTWAISTS AND
TABLE COVERS. HIGH SCHOOL, LOS ANGELES.

8. COPPER, SILVER, AND ENAMEL WORK. MANUAL ARTS HIGH SCHOOL,
LOS ANGELES.

**A. CONSTRUCTIVE AND DECORATIVE DESIGN. AGE 14-20 YEARS, 25 IN CLASS.
EVENING HIGH SCHOOL, ST. LOUIS.**

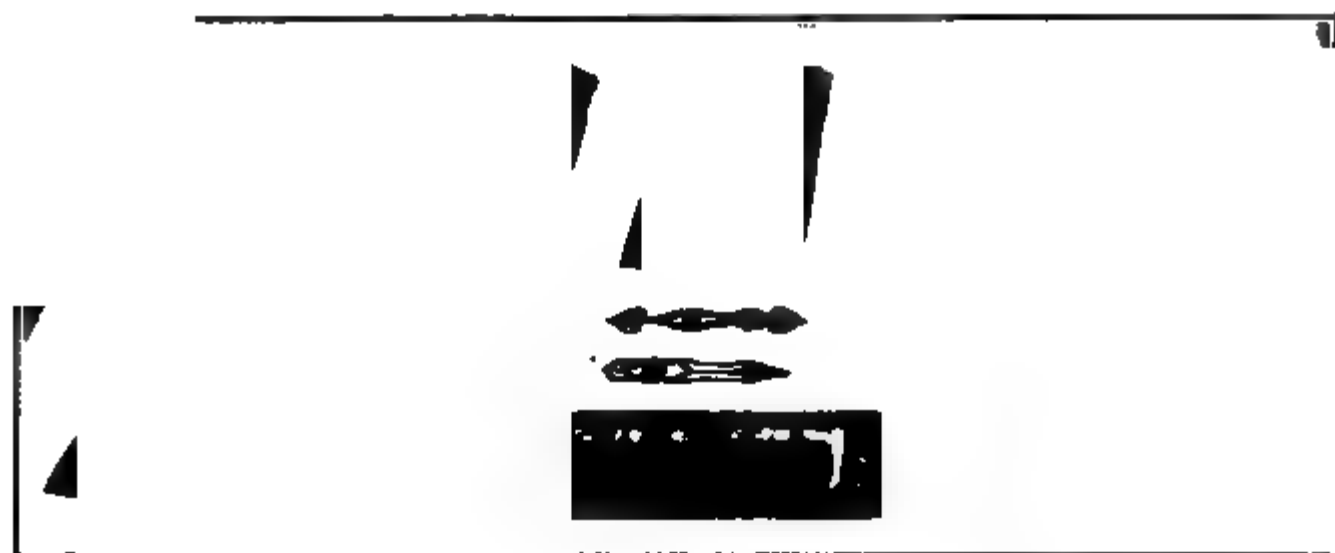
**B. CONSTRUCTIVE DESIGN. AGE 14-20 YEARS; 25 IN CLASS; THREE PERIODS
A WEEK. EVENING HIGH SCHOOL, ST. LOUIS.**

A. JEWELRY. BOSTON PUBLIC SCHOOLS.

B. APPLIED DESIGN; JEWELRY. TECHNICAL HIGH SCHOOL, THIRD YEAR, SPRINGFIELD, MASS.

4. METAL WORK, SIXTH GRADE BOYS, NEWMAN MANUAL TRAINING SCHOOL,
NEW ORLEANS.

A. SILVER AND COPPER WORK. TECHNICAL HIGH SCHOOL, NEWTON, MASS.



B. METAL WORK. BOSTON PUBLIC SCHOOLS.

C. METAL DESK SET. BOSTON PUBLIC SCHOOLS.

A. APPLIED ART. POLYTECHNIC ELEMENTARY SCHOOL, PASADENA, CAL.

B. METAL WORK. BOSTON PUBLIC SCHOOLS.

**A. POTTERY. AGE 18; 25 IN CLASS; 10½ HOURS ON PROBLEM. HIGH SCHOOL,
ST. LOUIS.**

**B APPLIED DESIGN; POTTERY. TECHNICAL HIGH SCHOOL, SECOND YEAR,
SPRINGFIELD, MASS.**

B. POTTERY. FIRST AND SECOND YEARS. NEW TRIER TOWNSHIP HIGH SCHOOL,
KENILWORTH, ILL.

C. POTTERY TEA SET. THIRD YEAR HIGH SCHOOL, NEWMAN MANUAL TRAINING
SCHOOL, NEW ORLEANS.

A. APPLIED ART. POLYTECHNIC ELEMENTARY SCHOOL, PASADENA, CAL.
(Under direction of Rudolph F. Schaeffer)

B. CONSTRUCTION IN WOOD AND METAL. BOSTON PUBLIC SCHOOLS.

**A. EXHIBITION OF DRAWING AND MANUAL ARTS. POLYTECHNIC ELEMENTARY
SCHOOL, PASADENA, CAL.**

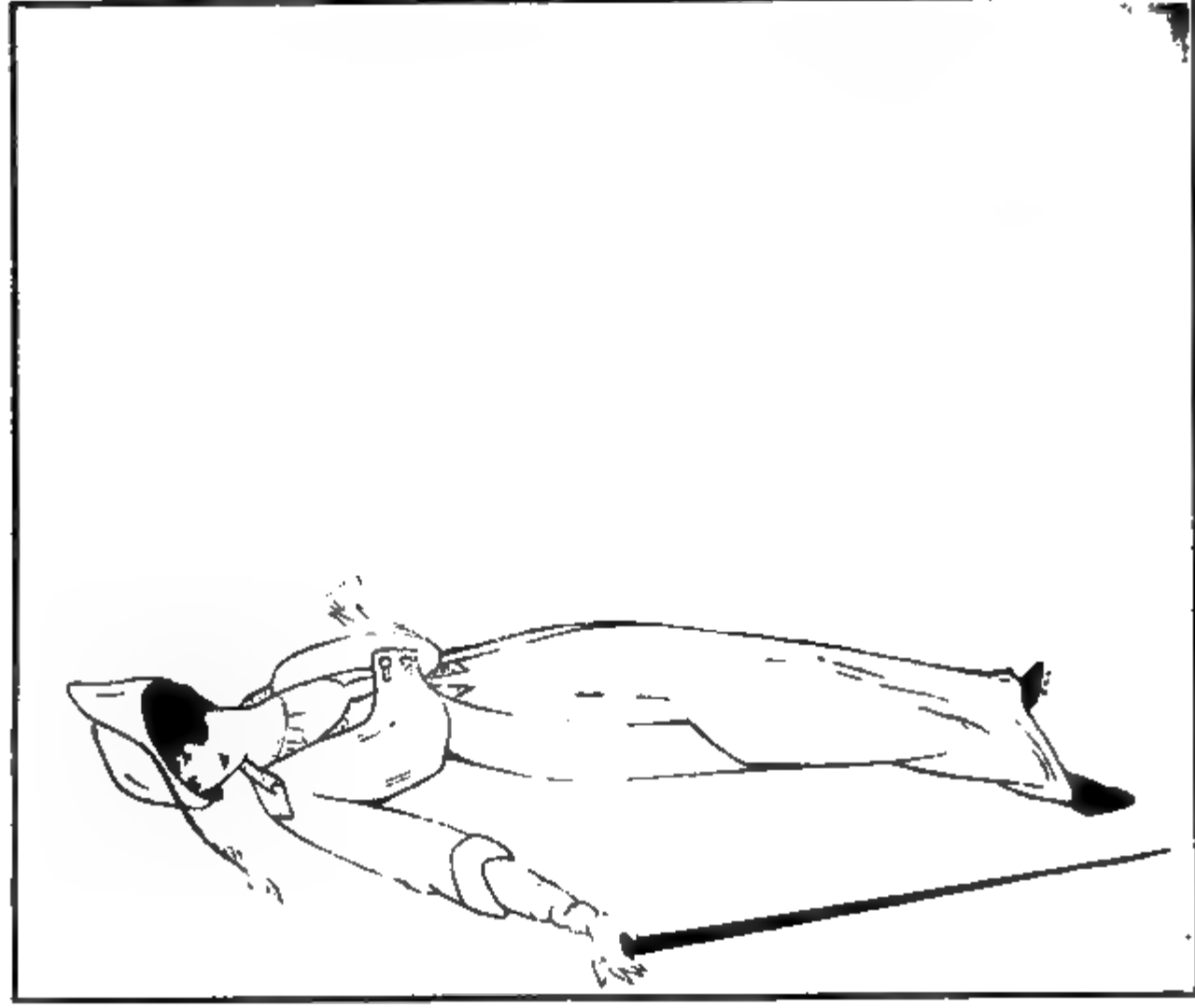
B. APPLIED ART. POLYTECHNIC ELEMENTARY SCHOOL, PASADENA, CAL.
(Under direction of Rudolph F. Schaeffer.)

**A. SWEDISH LOOM MADE BY BOYS IN THE EAST TECHNICAL HIGH SCHOOL,
CLEVELAND.**

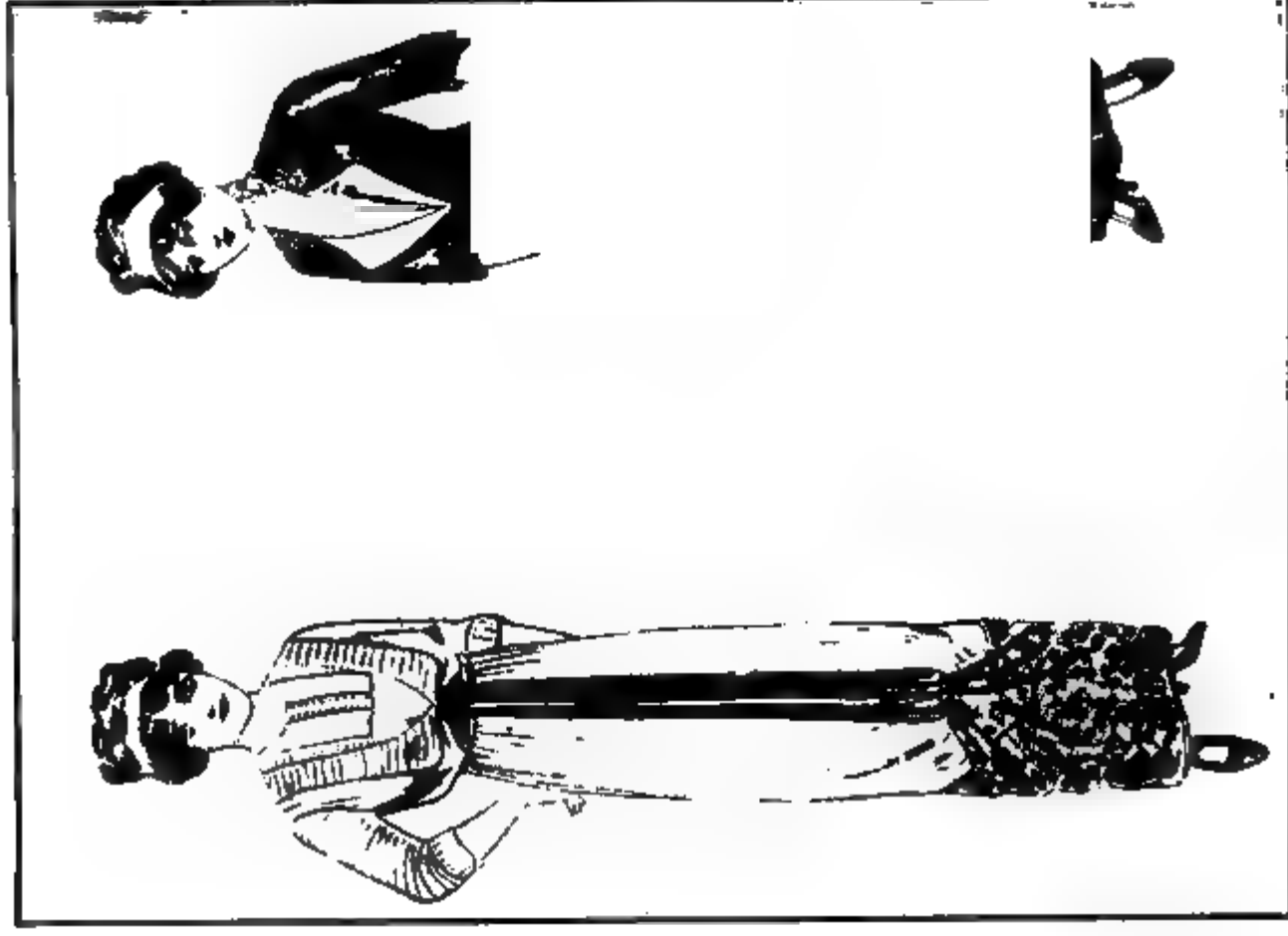
**B DESIGNED AND WOVEN BY STUDENTS IN THE EAST TECHNICAL HIGH SCHOOL,
CLEVELAND.**

A. STENCILED DRESS. INDEPENDENT
WORK OF PUPIL. CENTRAL HIGH
SCHOOL, SPRINGFIELD, MASS.

B. STENCILED CURTAIN. CENTRAL HIGH SCHOOL,
SPRINGFIELD, MASS.



A. COSTUME DESIGN IN BLACK AND WHITE, THIRD YEAR, WASHINGTON IRVING HIGH SCHOOL, NEW YORK.



B. COSTUME DESIGN IN COLORS, THIRD YEAR, WASHINGTON IRVING HIGH SCHOOL, NEW YORK.

A. DOMESTIC ART. WASHINGTON IRVING HIGH SCHOOL, NEW YORK CITY.

B. DOMESTIC ART. WASHINGTON IRVING HIGH SCHOOL, NEW YORK CITY.

A. OUT-OF-DOOR SKETCHING CLASS. HIGH SCHOOL, NEWTON, MASS.

B. FIRST GRADE—DEVELOPMENT OF THE STORY OF THE KNIGHTS PRIMARY
MANUAL ARTS DEPARTMENT, LOCKWOOD STREET SCHOOL, LOS ANGELES.

A. SCHOOL DECORATION. SCHOOL GROUNDS, HUDSON FALLS, N. Y.
(Courtesy of University of State of New York.)

B. SCHOOL DECORATION. UPPER HALL, HIGH SCHOOL, LANSING, N. Y.
(Courtesy of University of State of New York.)

A. SCHOOL DECORATION. UPPER HALL, HIGH SCHOOL, ONEONTA, N. Y.
(Courtesy of University of State of New York)

B. SCHOOL DECORATION. LOWER HALL, HIGH SCHOOL, ONEONTA, N. Y.
(Courtesy of University of State of New York.)

A. SCHOOL DECORATION. HIGH SCHOOL LOBBY, PLAINFIELD, N. J.

B. SCHOOL DECORATION. BRYANT SCHOOL AUDITORIUM, PLAINFIELD, N. J.

A. SCHOOL DECORATION. FRANKLIN SCHOOL AUDITORIUM, PLAINFIELD, N. J.

B. SCHOOL DECORATION. FRANKLIN SCHOOL AUDITORIUM, PLAINFIELD, N. J.

**A. SCHOOL EQUIPMENT, FIRST GRADE. MANUAL TRAINING SCHOOL, NEW
ORLEANS.**

**B. SCHOOL EQUIPMENT. DRAWING ROOM, NEW TRIER TOWNSHIP HIGH
SCHOOL, KENILWORTH, ILL.**

A. SCHOOL EQUIPMENT. THE STUDIOS, TECHNICAL HIGH SCHOOL, NEWTON,
MASS.

B. SCHOOL EQUIPMENT. DRAWING ROOM, HIGH SCHOOL, GLOVERSVILLE, N. Y.
(Courtesy of the University of the State of New York.)

- A. AN EXHIBITION OF WORK BY HIGH SCHOOL PUPILS HELD IN THE GALLERIES OF THE AMERICAN FINE ARTS BUILDING, NEW YORK, OF SPECIAL INTEREST FOR THE METHOD OF HANGING.

- B. LECTURE TO HIGH SCHOOL STUDENTS AT THE METROPOLITAN MUSEUM, NEW YORK.

(From annual report (1912-13) of director for high schools.)

A. FINE CRAFTSMANSHIP MODEL. V. D. BRENNER, SC.

Awarded semiannually to members of graduating classes in school workshops by the School Art League, New York.

B JAGUAR. BY ELI HARVEY. SCHOOLROOM DECORATION.

Placed by School Art League in public schools of New York City.

VOCATIONAL GUIDANCE

PAPERS PRESENTED AT THE ORGANIZATION
MEETING OF THE VOCATIONAL GUIDANCE
ASSOCIATION, GRAND RAPIDS, MICH.,
OCTOBER 21-24, 1913

ADDITIONAL COPIES

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10 CENTS PER COPY

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PREFATORY STATEMENT.¹

The organization of the National Vocational Guidance Association was completed during a series of meetings held in 1913 at Grand Rapids, Mich., October 21-24, inclusive. This was the third national conference on vocational guidance, previous meetings having been held at Boston in 1910 and New York City in 1912. At the latter meeting the conference authorized the selection of a committee to arrange for a convention in 1913 and to present plans for a permanent organization should such a procedure seem advisable after due consideration of the opportunities for service presented by present-day conditions.

In accordance with this authorization, the National Vocational Guidance Association was duly organized at Grand Rapids by the acceptance of the report of the organization committee, the adoption of a constitution, and the election of officers.

This bulletin contains the formal papers presented at the conference.

In addition to these papers, mention should be made of a Round Table "Question Box"² and of a remarkable session devoted to a series of demonstrations of the Grand Rapids plan of vocational guidance conducted in the Central High School and the Junior High School in Grand Rapids, the demonstrations being carried out largely by the pupils themselves.³ The questions presented and discussed at the round table showed more clearly than did the deliberations of any other session the need for such an organization as the National Vocational Guidance Association.

Perhaps the formation of a new society such as this, when societies are multiplying so rapidly, demands a word of explanation, if not of defense.

The new association was organized only when a careful study of the situation had disclosed the fact that no existing organization was in a position to do the work to which the association proposes to address itself; a work, furthermore, which should be undertaken immediately. There is no doubt that a widespread demand exists

¹ By Prof. Frank M. Leavitt, University of Chicago.

² See Appendix A, p. 83.

³ See Appendix B, p. 91.

for a more rational and humane guidance of the youth of the land toward and in vocational life, yet even a superficial study of the movement reveals the fact that divergent, if not conflicting, opinions are held as to the duties of public-school authorities to give advice to their pupils, or to exercise vocational supervision over the children who become wage earners at an early age. It is also clear that, as the result of several excellent but nevertheless partial investigations, a mass of information has been collected which must be more carefully collated before wholly trustworthy conclusions can be drawn.

Particularly important is the fact that the demand for guidance seems to come from three rather distinct sources. There is the economic demand, made in recognition of the fact that our industrial system needs a better or more efficiently chosen body of employees. This is closely allied to the phase of scientific management which shows the need of more scientific methods of selecting workmen.

Then there is the educational demand that our schools enlarge their functions to include not only preparation for vocational life, but also a specific plan of vocational guidance, even to the extent of finding employment for children about to leave school, especially for those who must do so at an early age to become wage earners. But it is not alone for the future industrial workers that teachers are demanding vocational guidance. Recently there has been a severe self-examination by the schools, and educators are coming to feel that even in the high schools and colleges courses of study are too often adopted at the dictation of tradition and too seldom with a clearly defined purpose. It is therefore quite as truly for the benefit of those more advanced students whose education is frequently misdirected, inappropriate, and unapplied, that the schools propose to exercise some form of vocational guidance.

Finally, there is the social demand for the guidance of youth, particularly those destined for early employment, for the very preservation of society itself. Such a demand recognizes the difference between the finding of employees for positions and the finding of suitable employment for would-be workers. It recognizes the need of important modifications in school methods and organization, and also the necessity for larger measure of social control of the conditions of labor in child-employing industries.

It was in recognition of the threefold nature of this demand, economic, educational, and social, that the organization of the new association was recommended. It was felt that it could help materially in coordinating the results, if not the efforts, of chambers of commerce and employers' associations, of educational systems, and of charitable or philanthropic societies in the important project of securing more adequate vocational guidance and supervision of the youth of the land.

The possibility of securing the same results through subcommittees of the National Society for the Promotion of Industrial Education and of the committee on vocational education of the National Education Association was thoroughly discussed. It is believed, however, that more immediate and certain progress can be made by a relatively large association of individuals interested especially in the problems of vocational guidance than by small committees of organizations as strong even as the two societies named. Conferences with representatives of these societies revealed the fact that both had as many specific problems under consideration as could well be studied for some years to come. The National Vocational Guidance Association hopes to cooperate with these and with other strong organizations. It is planning to meet in 1914 with the National Society for the Promotion of Industrial Education, as it did in 1913, and it is assured of a continuation of the helpful services which that society rendered the new association at its organization meeting.

With a clear definition of its field of effort the National Vocational Guidance Association enters upon its work and invites the membership of all who can help it or be helped by it. In the words of the constitution:

The objects of this association shall be to promote intercourse between those who are interested in vocational guidance; to give a stronger and more general impulse and more systematic direction to the study and practice of vocational guidance; to establish a center or centers for the distribution of information concerning the study and practice of vocational guidance; and to cooperate with the public schools and other agencies in the furtherance of these objects.

The organization committee was as follows: Chairman, Frank M. Leavitt, University of Chicago, Chicago, Ill.; secretary, M. Edith Campbell, director Schmidlapp Bureau, Cincinnati, Ohio; treasurer, James S. Hiatt, secretary public education association, Philadelphia, Pa.; Meyer Bloomfield, director vocation bureau, Boston, Mass.; Alice P. Barrows, director vocational educational survey, New York, N. Y. .

The officers elected at Grand Rapids for the year 1914 are: President, Frank M. Leavitt, Chicago, Ill.; vice president, Alice P. Barrows, New York, N. Y.; secretary, Jesse B. Davis, Grand Rapids, Mich.; treasurer, James S. Hiatt, Philadelphia, Pa. Executive council: Meyer Bloomfield, Boston, Mass.; M. Edith Campbell, Cincinnati, Ohio; George Platt Knox, St. Louis, Mo.; O. W. Burroughs, Pittsburgh, Pa.; E. M. Robinson, New York, N. Y.

Over 60 years ago Lord Macaulay declared on the floor of the British Parliament in reference to the employment of children:

Intense labor, beginning too early in life, continued too long every day, stunting the growth of the mind, leaving no time for healthful exercise, no time for intellectual culture, must impair all those high qualities that have made our country great. Your overworked boys will become a feeble and ignoble race of men, the parents of a more feeble progeny; nor will it be long before the deterioration of the laborer will injuriously affect those very interests to which his physical and moral interests have been sacrificed. If ever we are forced to yield the foremost place among commercial nations, we shall yield it to some people preeminently vigorous in body and in mind.

We have in this country already begun to reap the harvest of consigning a certain part of our family to tasks of meaningless, manual drudgery, and naturally enough we do not like the harvest. Let us not be misled by the fact that the prophecy in Lord Macaulay's indictment has not come true. We are gratified that we are not "forced to yield the foremost place among commercial nations." This is not, however, because of our intelligent organization of labor. It is simply because there is no such other race as Macaulay described—"some people preeminently vigorous in body and in mind."

That many other nations have apparently resigned themselves to the fate of such commercial prosperity as they may grind out of their underpaid and overworked children has been amply demonstrated in the international response to the recent proposal in the United States tariff bill to exclude the products of child labor from our ports. The National Child Labor Committee proposed this amendment to the tariff bill, not with any expectation of its enactment, but for the double purpose of calling the attention of our sister nations to the awakening conscience of American citizens against exploitation of young children for the convenience of the purchasing public and with the further object of forcing into the spotlight of universal condemnation those few of our Commonwealths that still persist in exploiting the labor of children of 12 or 10 or even less years. Both purposes have been achieved. The European press has called us hypocrites for proposing an international 14-year age limit while certain of our own States permit children to work at 12; and both the European and the Asiatic press have resented the proposed action of the United States as a menace to their commercial intercourse with us.

The matter is mentioned here because it throws into definite perspective the generally accepted policy of forcing, or at least permitting, a certain portion of every community to become the so-called "unskilled workers," glad to take any kind of job for any kind of wage. In the past our own people have been inclined to uphold such a system because they thought there was economy in low wages; but we are awakening to learn that the system is one of extravagance

instead of economy, and naturally our captains of industry, our leaders in manufacturing enterprises, are among the first to see the error and are clamoring for efficient workers.

It is a commonplace to hear that positions requiring brains can not be filled; that important departments of large manufacturing and commercial enterprises suffer because there are none among the workers who can advance to positions of responsibility requiring initiative and mental resourcefulness. Therefore business is calling on the schools to turn out a better product and to supply the demands of our enterprising industrial age.

The employers have a very definite program. They know what they want and are going after it. Let us not delude ourselves by thinking they are actuated by philanthropy. It is simply good business. They want a crop of fresh, young labor furnished them every year that can make fewer mistakes and more profits.

This is extremely gratifying, if educators will have the courage to take the helm. It indicates that economic self-interest is attempting to shake off the double burden society has long borne—the burden of using goods worth much less than they cost because poorly and inefficiently made, and of supporting by charity those paid less than their work is worth because of their poverty, inefficiency, and consequent helplessness. But while employers are awake to the need of efficiency, industry is not. Industry still beckons to the inefficient, the immature, the unprepared. Low wages and casual employment are open switches that lie ahead on the track of the child laborer of to-day. Society is very far from having reached a decision that unskilled labor must be abolished. The occupations which, outside of agriculture, absorb the output of our schools are barren of any element to make them of present interest to the child or to offer any hope for the future. The report of the Massachusetts commission made this clear a few years ago. A recent investigation by the Federal Bureau of Labor shows that of a certain number of children under 16 years who left school to work 90 per cent entered industries in which the wages of adults were \$10 a week or less. A vocational survey in New York City soon to be published exhibits in one group 101 boys between 14 and 16 years of age and an analysis of the work they are doing. For only five of them is there any opportunity to advance or improve; 96 are in dead-end occupations.

Business is now saying that if we had the right kind of schools all this would be changed; that child labor would become a blessing instead of an abuse for children. We are constantly told that, if the schools had the right kind of curriculum and gave the right kind of training, every child would have his natural capacity developed, and we should speedily put an end to the army of industrial misfits.

All this young life would flow naturally from our schools into the great sea of industry. Everyone would fit his place. The boy or girl of 14 who now leaves our school from the eighth grade or the fourth to enter on the endless quest for meaningless jobs would be succeeded by the boy or girl of 14 fitted to choose life's work intelligently and to enter upon it with efficiency. One educational expert has gone so far as to declare that with vocational schools established to meet the needs of those not destined to business or professional careers, every pupil ought, as the result of his training, to be in a position at 14 years of age to make an intelligent choice of the occupation he desires to follow.

In accepting this challenge of the business world our educators have, in my judgment, assumed an unwarranted responsibility for this condition. Those who assert that only the inadequacy of our school curriculum and the improper development of the child's mind stand in the way of a solution of this perennial tangle of industrial incompetence and inefficient job hunting, overlook two considerations of vital importance, one industrial and the other psychological. The industrial consideration is simply the fact that for the boy or girl under 16 years of age there is no place in industry. I speak broadly, of course, for there are exceptions; but in general it is clear that the time spent in industry or in the pursuit of industry before reaching that age is a loss to industry itself and almost always a loss to the child.

A study of the annual contribution of our city schools to the business interests of the community will show that a considerable percentage is thrown into the discard within the first month; that another large percentage goes drifting from job to job, sometimes advancing, quite as frequently receding, the industries complaining that the children the schools turn out are no good; and that the children lose courage, enthusiasm, and youthful idealism in the various meaningless jobs to which they are assigned. That many drift into casual and thence into permanent idleness is to be expected. The only wonder is that any ultimately rise to positions of efficiency and responsibility.

The skilled trades have no place even for a beginner apprentice under 16 years, and many allow no apprentices to qualify as journeymen under 19 or 20. This puts out of the field the choicer occupations, and leaves the majority of children to seek jobs as errand boys, delivery boys, messenger boys, cash girls, sweepers, cleaners, tenement homeworkers, street merchants, and the like. The building trades; the iron, steel, and woodworking industries; the printers' trade; the trade of the plumber, gas fitter, electrical worker, or glass worker—all these are closed to young children because they lack physical strength or maturity of judgment.

Our schools are not fair to themselves, therefore, in assuming that they or the child are wholly at fault. If the schools need a better curriculum, so does the industrial establishment. If the child needs a more definite and purposeful mind, much more does industry. One of the most vital services vocational guidance can render is to analyze our industries and train our youth to distinguish between a "vocation" and a "job." It is futile to give special training to a child for the purpose of fastening him to a machine on which he shall do purely mechanical labor for life. Business says: "Here are the jobs; what kind of children have you to offer?" We must reverse the inquiry and say to business: "Here are our children; what kind of industry have you to offer?"

Without professing to know much about the educational side of this problem; I am willing to admit all the criticisms our foremost educators launch against the present school curriculum and methods. Nothing can be more essential to the training of a child than a conception of his industrial obligations and opportunities. I should make this general. Instead of having one specialized industrial expert to diagnose and prescribe for our public school children, I should like to have the entire curriculum shot through and through with the meaning, the history, the possibilities of vocation. A glance at the curriculum of any well-ordered school will discover that almost every subject is susceptible of an industrial or vocational interpretation. Such as are devoid of this possibility are of doubtful value in the curriculum and should be dropped, unless someone can advance a valid defense for their retention. One of the most valuable results of the modern tendency to vocationalize our schools will be that both the curriculum and the teaching staff will become so imbued with vocational inspiration that they will advance into the realm where the child lives and speak to him in the language wherein he was born. The child thus finding himself at home in school will long to remain to the last possible moment, instead of, as at present, tugging at the leash, eager to leave at the first possible moment. This will be a tremendous contribution to the elimination of the young child from our industries.

To turn to our other consideration, we maintain furthermore that no child of 14 years under any possible system of educational training is equipped to make an intelligent choice of the occupation he desires to pursue. Any attempt to fit boys and girls to become wage earners at 14 years of age is based on the theory that society is bankrupt; that we need the product of their labor. But we are not bankrupt; the reserve wealth of our nation and of the world was never so great as to-day.

Undoubtedly, intelligent vocational guidance in our public schools will do much to turn the minds of youth into channels of occupation

most attractive and most promising. This has been true of our conventional schools for many years. The old style school is a vocational school to such as plan or are destined by the plan of others for the professions. The child who is to be a doctor, lawyer, clergyman, or teacher finds in the curriculum of the typical high school the very course essential to lay the foundation for his future profession. Every year he spends in the primary and secondary grades is directly contributing to preparation for his life occupation. But he does not have to decide at 14 or 15 or 16 years of age which of these professions he will follow. The decision may be deferred until years have given opportunity for a survey of the field, until the beginnings of experience have helped him to make the choice intelligently. The tendency in this direction is increasing. To-day the young man who desires to enter one of these higher professions is required to make more preparation, to lay a broader foundation than his father or his grandfather. And if the physician desires to become a specialist, he is not even permitted under the rules of the profession to take up his specialized study or practice until he has laid its foundation in a study of the profession as a whole.

The tendency of specialization is just the reverse in industry. For the professions we require a broad general curriculum on which the specialized profession shall be superimposed. For industry we assume it may be substituted.

How can a child of 14 years know whether he is destined for the professions or the manual arts? How many of us in this movement chose our life's occupation at 14 years or would have been capable of doing it under any form of training? I can not boast of my training, but at 14 years I was planning to be a railroad brakeman. At 15 I had determined to be a horse doctor. At 16 the current of my life was changed through the fortunate circumstance of having a brother so determined to go to college that he cooperated with my parents to get the whole family there. It may have been a mistake, but it deferred the choice until after the adolescent period. At a meeting of prominent educators in New York last week I asked the 35 men present how many had chosen their present occupation before they were 20. Only 2 had done so.

The child destined for occupation in what we call "the industrial world" has no such demand laid upon him. He is not required to lay a foundation in general culture; neither is he required to become familiar with the various branches of the occupation in which he is to engage. He is not expected to know how to make a shoe in order to become a shoemaker, or to know how to fit and join in order to become a carpenter, or to know how to corral, segregate, and dispose of dirt in order to become a street cleaner. Instead of superimposing his specialization upon his general training, we seek to substitute

specialization for general training. This not only belittles the industry under consideration, but cribs, cabins, and confines those destined to engage in it. What is that ignoble thing about industry that makes it careless of its craftsmen? It should demand as thorough preparation as professional life, except in such forms of labor as are almost entirely mechanical, and these should never be open to children, but only to those who have had their day of idealism and inspiration. We reveal that we have not yet risen to the point of looking upon our industrial occupations as sacred callings ministering to the necessities of our race, but as the unfortunate fate of those who through poverty, inexperience, or lack of personal initiative are unable to get on top and draw profits from the labor of others.

So long as we view industries in this light we shall continue to consign our children to them; we shall continue to reward the manual laborer with wages too slight to maintain him and his family in decency; we shall continue to place upon our public and private charitable agencies the tragic burden of bent and broken old age, suffering the privation of grinding poverty as the only visible reward for a life of long service in the ranks of labor.

Our whole tendency in this splendidly inspiring educational awakening should be toward recognizing that we have entered upon the credit side of our ledger; that we are having to do henceforth with the problems of human possibility rather than of human poverty; that society has reached a point where it can feed, clothe, and house itself without crushing life, either physical, mental, or spiritual, from any of its children; that we can perform the work required and at the same time guarantee reasonable hours of labor to our adult workers and the opportunity to grow and play and learn to all our children.

What this will mean to the ultimate lifting of labor from its present bent position can hardly be overstated. But to enter deliberately upon an educational policy which classifies little children into those destined for the professions and other pleasant callings on the one hand, and those destined as manual laborers on the other is to attempt a cleavage in society which is a direct contradiction of all our theories of democracy. Prof. Hanus said recently:

Education is a preparation for complete living. * * * Complete living includes usefulness and happiness. Usefulness is the activity that promotes the interests of mankind. Happiness means the enjoyment of work and leisure. Education should therefore equip a boy for a vocation and also equip him for an enjoyment of the refined pleasure of life.

Such an education will break down the present class distinctions which already cleave society and wreck so many lives. If, as I suppose, we all believe in real democracy, we must reach a point at which

we can stop talking about the "friend of the workingman," the "housing of the working people," etc. Who has a right to be housed except the worker? Why should the worker require a "next friend" at court as his guarantor or sponsor? Who has better right to stand close to the throne? Are not his own hands his credentials? But he can maintain his right only by having been given the opportunity in childhood to store his mind with useful and beautiful knowledge as well as his hands with technical skill.

If we educate our workers to make them appreciate their work, to recognize the unity of industry, we shall have real leaders among them. We now have "captains of industry." The phrase is well taken. In many of the industrial crises the protesting workmen are actually like sheep without a shepherd.

Through a proper system of vocational guidance in our schools industry will cease to be poverty-stricken on the side of leadership. It will cease to depend on leadership from outside. From the ranks will rise statesmen able and glad to defend the people's sacred rights.

Let us accept the goal proposed by Mr. Prosser, secretary of the National Society for the Promotion of Industrial Education, that every minor child shall be regarded as a ward of the State. Let us insist that the industries offering valuable training to children shall become an adjunct of the schools. Let us insist that the child's future usefulness, not the present balance sheet, shall be the measure of the success of this guidance into vocations, and let us resist every scheme to make the labor of young children a makeshift to maintain themselves or their family.

B.—THE LARGER EDUCATIONAL BEARINGS OF VOCATIONAL GUIDANCE.

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The school is an institution fashioned as other institutions. It has its roots in the past. It has held its own in the midst of contentions and against hostile forces by being what it is. It has been conscious of its value for society because of its past and has found its courage and self-respect in its accomplishments. Especially the public schools of a democracy such as ours have had need of a strong hold upon its traditions. Our democracy has been suspicious of the standards of a learning and a literary art that belong to an upper class, and of the standard of an efficiency that arose out of a bureaucratic government.

Our school system has had its own practical traditions; and where it has added to its earlier meager curriculum, the addition has been frequently without any controlling principle. We have been very

proud of our American common public school, but we have never been quite clear what our schools have done for us, nor from just what standpoint we should criticize them. They have been the bulwark of our liberties, but we have been very generally unwilling that they should undertake more than the drill in the three R's. When we have overloaded their curricula, and the cry has arisen against the "fads and frills," there has been no definite conception of what they should do by which we can test the demands of rival educational theories.

To a large extent the educational policy of most of our large cities has represented a fluctuating compromise between forces that have been by no means all educational forces. This situation is common to our popular education and to our popular government. We know that they are precious institutions, but we treat them with a great deal of good-humored ridicule. They are the palladia of our liberties, but concretely we have not wished to have to take them too seriously. The school-teacher and the politician have been standing subjects for the wit of humorous papers.

But a change has come about in our attitude toward our governmental institutions. It is a great deal clearer to us what these institutions should and can do. We may not be any clearer as to the fundamental theories of government, but the community now knows that popular government is itself our most precious treasure and it is becoming aware that this precious institution can be called upon to do certain specific things.

Industrial education and vocational guidance mark the points at which our public schools are making such contact with actual life that the community may intelligently criticize the schools and control them in something like the same sense that it may control the management of technical departments of our governing bodies.

Fruitful contact implies primarily that the community shall be able to pass in certain respects intelligent criticism upon the school, criticism which the school authorities will themselves seek and of which they will be able to make profitable use. This implies further that the school life reaches back into the home and the community of which the home is a part and out into the occupations which the children enter when they leave the school. Lack of such intelligence and such connection between the school and the life of the community is evidenced in a type of criticism with which we are familiar. These criticisms gather mainly about the lack of drill in the three R's. Spelling, number work, and English, we are told, are slovenly; the graduates of neither the grades nor the high schools can write a fairly respectable letter; the commonest words are misspelled; the English is atrocious; the ability to cast up a simple column of figures is

lamentably absent; and yet the children are so possessed with a sense of their own competence that they can not be corrected nor taught in the offices where they are employed. The cry arises at once that the curriculum is stuffed with comparatively useless subjects while the weightier matters of essential importance for vocations are neglected.

The school authorities are compelled to bear the onslaught of this irresponsible criticism. Their critics hark back to the good old years when the simpler courses of study and the sturdier discipline of the rod brought forth the results so lacking in our degenerate days. They continue thus to criticize though actual proof from the tests of the schools of our grandfathers clearly indicates that the children came out of these more Spartan institutions less well-equipped even in the three R's than are the graduates of our own grades. These attacks upon the schools are recurrent. Each year when the employer of boys and girls loses control of the irritation caused by youthful incompetence he is apt to pour out his wrath on the institutions from whose hands he receives his employees.

Unfortunately the relation between the school and the occupation has been so slight that the comment and criticism called out by the child's failure to fit into the machinery of the office, the shop, or the factory has little value beyond the registration of friction and of the need of adjustment. It is not illuminating comment and criticism. The teacher naturally resents the implication that the child's entire education should consist in drills in spelling, penmanship, and figuring, flanked by stenography, typewriting, and cataloguing. If the child's employer is to have and express an opinion upon the child's school training, that opinion must be more enlightened and more improved by interest in the child's entire welfare. The teachers, failing to find such all-round judgment in members of the community who employ the graduates of our public schools, naturally come to regard themselves as the only competent judges of what the school training should be.

Fortunately this gap between the community and the school has been bridged at a number of points. The schools have undertaken a certain amount of vocational training, and upon strictly vocational training the comment and criticism of those representing these specific vocations is felt to be pertinent. It has been even in some degree sought by the school itself. Out of this interplay have arisen various departments of vocational training, such as technical high schools and commercial high schools. In touch with these schools the business and technical men have formed advisory boards for consultation with the teaching and administrative forces of the school, both as to curriculum and as to the actual conduct of the training itself, and the teacher, on the other hand, has on occasion followed the child in his first entrance into work, at times guarding the child's

interests and himself getting concrete material for the subject matter of the schoolroom work. The commercial high schools in Boston and in Cleveland and the technical schools in a number of our cities are illustrations of institutions in which the occupational training already present in the school has not only been improved by this technical outside interest and cooperation, but in which the vocational training has become more educative and cultural than it was when it lacked this outer stimulus to efficiency.

The inference from this is that what we have lacked in the community's complaints against school training has been a larger and more fruitful contact between the school training and the social situation for which the child is trained.

No one will assume that such instances as these solve all the many problems of education which, old and rising in novel forms, face the teachers and administrators of our great public school systems. A very large number of our school children are not and can not be oriented toward such specific occupations that their training can be made frankly vocational, and we would be turning our backs upon the best educational traditions if we should separate those who graduate from the grades or the high schools into shops and offices from those who will continue their scholastic training or who have no specific vocations before them. A democratic education must hold together the boys and girls of the whole community; it must give them the common education that all should receive, so diversifying its work that the needs of each group may be met within the institution whose care and generous ideals shall permeate the specialized courses, while the more academic schooling may be vivified by the vocational motive that gives needed impulse to a study which may be otherwise unmeaning or even deadening.

Vocational training came into the American school system somewhat tardily, but it has at last passed the door. It is true that it still remains a question whether in the immediate future it will be frankly recognized as an integral part of our public school work under a single direction, or whether, under a separate direction, it is to be kept outside the organized system of public education.

However this question may be answered in the immediate future, I can not believe that eventually it will be possible to keep separate two sides of the training of children which in material and method supplement each other—as theory and practice, as material and interpretation, as technique and application.

There is a further powerful argument against the separation of vocational training from academic training in the public school, and that is that vocational training has made the contact with the community conditions under which this education is to be used and has thus brought itself into a normal situation within which it must be

checked and tested by its results. It is just this contact which our public-school training for life has hitherto lacked. In so far as vocational training and public schooling can become a part of the same educational process, just so far will the benefits of this close functional relation between the children's training and the life of the community pass over to all parts of the preparation of our children for life. I know of no answer that can be made to this argument except one which must maintain that vocational training may not be educational, and that the more academic subjects of the school curriculum have no organic place in the curriculum of vocational training—contentions which the best vocational training in this country and in Europe abundantly disproves.

It is to the other phase of this contact of the school with the community to which I wish to direct especial attention, the answering phase of vocational guidance. I hope, however, it has been sufficiently emphasized that vocational training and vocational guidance are normally linked together. Through these two doors the community gains admittance to the school.

Perhaps the most striking evidence that the community through vocational guidance is able to cooperate healthfully with the school and exercise a legitimate criticism in the process is found in the fact that the school more or less unwittingly has been itself a vocational guide, has been determining what occupations many of the children who leave school shall enter, and the further fact that this unwitting guidance and direction, just because it has been largely unintentional, has been in no small degree unfortunate for the children. In so far as the school has fitted its pupils to enter one occupation rather than another, just so far it is guiding them to this vocation.

If the school had in the past as deliberately trained the children in the mechanical arts, had centered its study of history as diligently around the growth of industry, had studied the industries in the community as earnestly as it has trained them in the arts of the office and the counter, as it has organized its study of history about literature and politics, as it has studied the careers of its successful politicians, warriors, and literary men, it would unquestionably have been guiding them toward the mechanical occupations. But the school has uncritically accepted the general attitude of the community that each child should take advantage of the unequaled opportunities that America has offered of getting up in the world; and the uncritical assumption back of this attitude has been that the upward path lay away from the labor of the hands and led toward the labor of the wits, and that these were trained by the uses of language and mental arithmetic. Success has generally meant achievement in business, in politics, or in one of the professions; and the schools, apart from the

generalities found in its reading books or heard from its rostra concerning the nobility of labor and the beauties of the simple life, have unconsciously adjusted themselves to those callings in which lay the opportunities for the successful man. The training in these branches has not been extensive, but it used to be the boast of our American society that the grounding of the three R's gained in the common school was all that was needed for the energetic man; that he had much better get the rest of his vocational training in business or politics than in the school; while the professional man must gain his technique in professional training schools.

While the curricula of both the elementary and the secondary schools have been immensely enriched, especially in those subjects which are termed cultural, the trend of the training has continued to be toward business, politics, or further preparation for college or professional study. It has followed very naturally from this that the children find themselves directed toward office work, and that when training is offered in mechanical arts side by side with the technique of office work the training for the white-collar jobs is the more attractive. The schools growing up in the traditions of the American community have been guiding the children toward a certain type of vocation.

We have referred to positive guidance. There is a negative guidance, which is the more serious, because it arises from a lack of vocational training or direction. In the schools of the country at large between 40 and 50 per cent of the children in the elementary schools are eliminated before they have finished the grades—that is, before they have acquired a common-school education. It is the judgment of those who have studied these children that they are not able to retain even the meager acquirements of the lower grades. They are less capable readers and writers of English and less capable figurers in the years after they have left school than they were in the school itself. They constitute an inconsiderable fraction of those who attend the night schools. They have not that minimum of education which our common-school system, with the compulsory attendance regulations, contemplates. They are not fitted for any but the unskilled vocations; and our community, in leaving the schools with their predominantly academic curricula, their direction toward only one type of vocation and the inadequate laws governing school attendance is much more effectively guiding these unfortunate graduates of the fourth, fifth, and sixth grades toward the unskilled occupations than any system of vocational training could guide its graduates into the skilled trades.

It is impossible for the community to avoid the task of guidance. If it is not undertaken consciously and with adequate forethought,

the schools, from the very nature of school training, its adaptation or lack of adaptation to the occupations of the community, its success or failure will determine in large degree what doors shall be open or closed to those who leave school. The aptitudes and ambitions gained in school and from the surrounding neighborhoods shape the children's possible careers.

This guidance must be incomplete even when the school system frankly recognizes its duty toward vocational training. It is through the door of the vocational guidance and training that the school enters into immediate concrete contact with the homes and neighborhoods from which the children come, as well as with the industries into which they enter, and the meaning for the school of this contact is not exhausted when it undertakes various types of training in the industrial and household arts. The destination of the particular child can not be left to his own immature judgment or whim; nor is the teacher alone a competent judge; nor can the decision be safely left to the parents alone—in whose hands it might seem to be most safely left.

The experience in vocational guidance in England and in this country is conclusive upon this point. The parent, the social worker who so frequently must help parents to interpret their social situation, the teacher, and some one who understands the labor market for children and the character of the occupations, especially what they have to offer the employees in the future, must get together if the best possible chance is to be offered the child. This is especially true if the child leaves school with but little training and faces a market for only unskilled labor. To find that opening which carries with it some training in skill, some future beyond the minimum wage, which avoids the blind alleys and the many pitfalls that child labor so abundantly provides, to find this opening for the immature child who goes out to work for the community under the least satisfactory conditions is surely the common duty of the school and of the community. And it is an individual task that has a new character with each child. It can not be undertaken or carried out in a wholesale manner. No child should leave school to go to work without the benefit of all the guidance which those who have reared and taught and are about to employ him can give. The meagerness of the training which we can give the majority of our children emphasizes this duty. It is further emphasized by the value for society of the human material with which we are dealing.

But in our interest in the particular child we must not overlook the immense value which such interest should have for the school itself. It is the process by which the institution of the school passes from its fixed dogmatic stage into that of a working institution that has come to consciousness and can test its methods and presupposi-

tions by its results. For in this task of guiding the individual child into his occupation, the school faces its own accomplishment tested by the most important value which society possesses, its future citizen. The standpoint for the judgment of the school and all its works is inevitably given in the conscientious attempt to guide the particular child into the best occupation he can find in view of his training and background.

It is upon this phase of vocational guidance that I wish to insist—its value for the school. Its importance for the individual child is too evident to need argument or rhetoric. The obligation of the community that employs the child; that too often exploits him; that turns him loose upon the streets at the age of 14 and refuses him any employment with a future until he is 16; that invests great sums in an education which half the time it does not carry to the point of adequate return either to the child or to the community—the obligation of this community to reach out its hand to the child and guide him to the most favorable opening is also evident enough; the only difficulty is to find the corporate bodies of the community upon whom this obligation can be fastened. To a very large extent this sense of responsibility has come home only to the social worker whose interest in the child and his family has made his individual case real and pressing. Even the employer has come to realize in some cases the value of vocational guidance to the business that employs the child. The teachers who inevitably feel a genuine interest in their pupils will, if they are able, extend this interest to these most crucial moments in the child's career—when he seeks his first job. Beyond this human interest there is the import to the school of this first test of the child's training. The test, of course, is that of the whole educational process and it affords ground to criticize the age at which the child comes to school, the whole training given in the school, the age of leaving school, the forms of occupation these factors prescribe for the child, and the care of the child after he has left the schoolhouse up to the time of the completion of his training for his occupation.

It is not too much to say that our schools are still in one respect medieval. They assume more or less consciously that they are called upon to indoctrinate their pupils, and that the doctrine which they have to instill—whether it be that of language, number, history, literature, or elementary science—is guaranteed as subject matter for instruction by its own truth, by its traditional position in the school curriculum, and finally by its relation to the rest of the ideas, points of view, artistic products, historical monuments, which together make up what we call our culture. These tests of subject matter in instruction may be fairly called internal and do not carry the judgment of the pedagogue out of the schoolhouse. The subject matter is determined, then, in a real sense by authority, and it follows that

when the results of the training are disappointing, the pedagogue feels that he is secure within his institution and can calmly pass the charge of inefficient training on to other social agents and conditions. No one will question the legitimacy of these tests if they are recognized as organic parts of the larger test of the working of the child's school training when brought up against its use in practice.

The medieval character of the school is shown in the separation of the institution, which has the doctrines of education intrusted to it, from the other training processes in which the intellectual content is at a minimum and the practical facility is at a maximum. In the real sense the doctrine which the school inculcates should be continually tried out in the social experience of the child—there should be a play back and forth between formal training and the child's actual conduct. Until this is brought about the school will continue to be in some degree medieval and scholastic; but every fresh contact with the situation of the child who has been imbibing the doctrine and now must make use of his training in his social world outside is of immense value in enabling us to bring the child's training as a whole a little nearer the normal education of the citizen to be. No small part of this criticism must fall upon industries which are willing to exploit children, in some sense enticed from the school by the promise of a paltry wage, and upon the inadequate training regulations of the governments of our school districts.

After all, the school is the self-conscious expression of the community in child training; it is the rational, intentional institution; and however essential the activity of outside agencies are in direction and training of children, the school should be the central and organizing agency. It can, however, become such a central and organizing agency only as it abandons its medieval position of giving a body of doctrines and techniques which find their justification in themselves rather than in their value in conduct, at home, in the neighborhood, and in the vocations.

Such a testing of the doctrine and technique of school training is not to be taken in any narrow sense. In the first place, it is the final good of the child rather than his immediate wage that must be considered; in the second place, we all realize that many of the values that accrue to the child from the school training are intangible and can be stated with difficulty, if at all, in terms of his success in a trade or an office. What I am pleading for is the recognition that it is in relation to his vocation that all the child has acquired should be regarded, even if some of the acquirements are intangible and can not be weighed in the coarser scales of wage and advancement. In a word, it must be through the child's vocation that he can get to the positions in which these very intangible results of schooling will have

their season of flowering and fruiting. Unless a child can get into life he can not have it, no matter how well he may be prepared to appreciate much that is fine therein. The school may not concentrate its efforts upon values to be realized later unless it sees doors open through which the child can reach the uplands of life. It is the whole life of the child that the school must envisage, but it must conceive of it as growing out of the child's first beginnings in the world after he leaves school. Unless the school helps the child effectively into the larger fields, it is in vain that it has given him their chart.

Now it is at least consonant with the traditions of American schooling to assume that culture and training form a whole, and that the higher values grow out of the immediate necessities; to assume that in the immediate experience of the child there are found the opportunities for development of what the school has to inculcate. It is not only possible, but pedagogically correct, to give a child the history of his country from the standpoint of the industries into which he must enter; to follow the line of the child's vocational interest in organizing his course of study, with the full recognition that such a vocation has its essential relations to all that the child has to learn. Even from the point of view of the subject matter of the curriculum, the school can profit by making its standpoint vocational guidance, the guidance of the child becoming the guiding principle of the curriculum. The illustration has been taken largely from the case of the children who go direct from an incomplete elementary schooling into the shop, factory, or office; but it must be remembered that the same principle holds, whatsoever the vocation of the child may be, and it is even true that the child may well profit in his elementary and perhaps secondary training if he looks toward some vocation whose outline he can discern better than the profession which he may later follow. Trade training when adequately given is sound education even for those who will not be tradesmen.

But it is the still broader outlook that I would insist upon for the school. Not only should the school conceive of its subject matter and method from the standpoint of the success and failure of the children when they leave school; it should be humanized and socialized more completely by keeping the human fortunes of its children perpetually before it, and by continually questioning its own material and method when its graduates stumble and fall before the obstacles that confront them when they leave the schoolhouse. It should be so organically related to the other agencies that regard the success and failure of children—the home, the social workers, the employment agencies, the employers and their various plants, the higher schools into which some of its pupils will pass, and the whole

community into which as citizens it will send its students—that the contacts which vocational guidance brings with it will be largely sought and intelligently used for purposes of criticism and interpretation.

To sum up, vocational guidance means testing the whole training given the child, both within and without the school. It is the point of contact with the outer world from which to criticize both this training and the occupations into which society admits the children whom it has partly educated. The healthful relation of the school to the community, and especially to the other agencies that train our children, depends upon the school making the standpoint of vocational guidance a dominant one in its whole organization.

In accepting this standpoint the school will abandon the medieval position and will come into full human relationship with homes, neighborhoods, occupations, and all the agencies that are bound up with the development of the rising generation. In accepting the challenge of formulating the education of the child on terms of the uses to which he will put it, the school should abandon nothing of the higher values of which it conceives itself to be the carrier, but should recognize its task to be the statement of these values in terms of the child's own experience.

In vocational guidance the school finds its supreme task as the conscious educational institution of a democracy.

In endeavoring to formulate the larger meaning of vocational guidance for the school, I seem to have gone away from the immediate concrete and often meager undertaking of the vocational guidance with which we are familiar, but acquaintance with intensive studies of the schooling and occupations of children in a poverty-stricken industrial section of Chicago has convinced me that the task of following up the boys and girls who, with incomplete schooling, search after wretched jobs, brings out with terrible force the necessity of regarding and judging our whole process of child training from the standpoint of the vocations into which we are unconsciously driving them. The children are worth so much more than the occupations to which we dedicate very many of them, and, after all, the school is the one institution which can express this value of the children in terms of the preparation it gives them for life; hence it can speak with authority to society as to the occupations into which the children may enter. It is at this meeting point of training and occupation that the school can criticize its own achievements and at the same time the life into which the children are to enter. It seems to me of supreme importance both to the children's training and to their vocations that both should be formulated in terms of vocational guidance.

C.—STUDIES IN OCCUPATIONS.

LEONARD P. AYRES,

Director Division of Education, Russell Sage Foundation.

Recently we have been conducting a series of studies in the division of education of the Russell Sage Foundation with the object of finding a fact basis for some of our thinking and acting in regard to vocational education and vocational guidance.

One of our investigations consisted of a study of certain facts concerning the 13-year-old boys in the public schools of 78 American cities, and of their fathers. We chose the 13-year-old boys because they are in the last year of compulsory school attendance. They are the ones who under present conditions leave school in large numbers to enter money-earning occupations. The first fact that we learned about these boys was their school grades. We found that they were scattered in every grade, from the kindergarten through the high school. More significant still, we found that one-half of them were in the sixth grade or below. To my mind, the significance of this fact is that the kind of vocational guidance that these boys need is the kind that will keep them in school longer, and the kind of vocational guidance that these school systems need is the kind that will help them to carry such boys as these forward through the grades further and faster. Certainly, the boy who has completed the compulsory-education period and is in the third, fourth, or fifth grade is not prepared to enter any money-earning occupation.

Another thing that we found out about these boys and their fathers was where they were born. This inquiry disclosed the facts that among the fathers only 1 in 6 is now living in the city where he was born, and that among the boys only a little more than one-half are living in the city of their birth. These facts seem to indicate that vocational guidance must have a broader outlook than that which relates solely to the local industries; for, if present conditions maintain in the future, one thing that we can be sure of is that many of the young people of any given community will eventually find their life work in some other community.

The next set of facts that we gathered concerning the fathers of these boys related to the industries and occupations by which they earn their livings; and the analysis of these data brought to light the significant fact that there are some occupations common to every community, which we may therefore term "constant" occupations. Other occupations are found in some localities and not in others, and these we may term "variable" occupations. The constant occupations are those that are necessary to maintain the many branches of the enlarged municipal housekeeping that must go on wherever large

numbers of people live together in one place. For example, house painting must be carried on in the city where the house is, while paint may be manufactured anywhere. The baking of bread must be carried on by each community, but crackers can be baked somewhere else and brought into the city.

In making our analysis of constant and variable occupations we enlarged the scope of our inquiry so as to include all of the cities of the United States of more than 50,000 population. We discovered the facts concerning the number of people engaged in each of 140 separate occupations in each one of those cities. As a result we found that there are 20 constant occupations in which the number of men workers is at least equal to 1 for every 1,000 of the population, and 7 constant occupations in which the number of women workers is always at least equal to 1 for each 1,000 of the population. We discovered, for example, that in any city in the United States of 50,000 population you will always find more than 50 barbers, and that in the average city of that size you will find 150 barbers. It so happens that this is the most constant of all occupations, so that if anyone knowing these facts had been able to foresee that Gary, Ind., for example, would be a city of 40,000 population, he would have been able to prophesy ahead of time that the city would employ approximately 120 barbers. These constant occupations, with the number of people engaged in them in the average city, are as follows:

MEN.		WOMEN.	
Occupations.	Average number workers per 1,000 population.	Occupations.	Average number workers per 1,000 population.
Bakers -----	2	Housekeepers -----	2
Shoemakers -----	2	Nurses -----	3
Street railway men -----	3	Laundresses -----	4
Plumbers -----	3	Saleswomen -----	4
Barbers -----	3	Teachers -----	5
Masons -----	4	Dressmakers -----	9
Blacksmiths -----	4	Servants -----	25
Printers -----	4		
Engineers -----	5		
Walters -----	6		
Bookkeepers -----	6		
Printers -----	7		
Machinists -----	8		
Steam railroad men -----	11		
Carpenters -----	11		
Salesmen -----	12		
Teamsters -----	12		
Clerks -----	15		
Storekeepers -----	15		
Laborers -----	37		

It is almost certain that if this list was brought up to date two, and only two, additional occupations would be included—those of stenographer-typewriter and chauffeur. These occupations include in the aggregate more than half of all the people engaged in gainful occupations in all our cities. These facts appear significant. They

seem to indicate that if all other conditions are equal, vocational guidance should give preference to occupations that are everywhere constant over those that are not.

Our next study consisted of a consideration of certain characteristics of different industries which it would seem fair to take into consideration in deciding whether or not any given occupation holds out such promise to the future worker that it may justly ask the cooperation of the public schools. In considering these tests or criteria for judging industries, we have taken the somewhat unusual position that if any industry is to demand of the public schools, "Train our future workers," the public schools not only may but must ask of the industry, "What have you to offer?" We are looking at this matter from the point of view of the producer and his quality, and not from the point of view of the product and its quantity.

Taking six common manufacturing occupations at random, we asked, first: "What are the current weekly wages paid to adult male workers?" In this comparison we have found the percentage of adult male employees in each of these industries receiving weekly less than \$10, the percentage getting as much as \$10 but less than \$20, and the percentage getting \$20 and more. Our object here was to find out whether there was in each industry, in the phraseology of George Ade, "always room and board at the top." Our results were as follows:

Weekly wages in certain occupations.

Occupations.	Percentage of workers receiving weekly—		
	Under \$10.	\$10 to \$20.	\$20 and up.
Printing.....	36	50	14
Agricultural implements.....	48	48	4
Bakeries.....	33	63	4
Breweries.....	16	75	9
Shoes.....	54	41	5
Planos.....	31	60	9

It is not only important to know how much each worker finds in his pay envelope each week, but we also need to know how long he works each day to fill that pay envelope; so our second question related to the prevailing hours of work. The results are as follows:

Occupations.	Hours per day.
Printing.....	8
Breweries.....	8
Planos.....	9
Agricultural implements.....	9½
Shoes.....	9½
Bakeries.....	10

While wages and hours of work are of prime importance, the problem of the amount of unemployment during the year must also be taken into consideration; and this we have investigated by finding what proportion of the workers are idle during each of the 12 months.

In judging these industries the factors affecting economic efficiency are of prime importance, but those affecting physical health must not be disregarded. This last item has been studied by finding the death rates per 1,000 employees in each of the industries, with the following results:

Occupations.	Death rate per 1,000 employees.
Shoes -----	9.4
Agricultural implements -----	10.5
Printing -----	12.1
Bakeries -----	12.3
Pianos -----	18.0
Breweries -----	19.7

We have included one more factor in our series of suggested tests, and that relates to the degree of concentration of the industry. It is important to know whether the industry is one in which the chances of employment are relatively good throughout the country, or one confined to a restricted locality. Taking some extreme cases, we found, for example, that 79 per cent of all the cuffs and collars manufactured in America are made in the small city of Troy, N. Y.; that 87 per cent of all the grindstones are manufactured in the State of Ohio; and 57 per cent of all clothing is made in New York. There are about 20 other important industries that are to a greater or less degree in the concentrated class.

To summarize, some of the larger social, economic, and educational bearings of this problem, as they have presented themselves to us during our investigations, are as follows: If we are to engage in vocational guidance, our first and greatest need is a basis of fact for our own guidance. The kind of vocational guidance that many of our children most need is the kind that will guide them to stay in school a few years longer, and the kind of vocational guidance that our schools most need is the kind that will show them how to carry the children forward through the grades further and faster. Vocational guidance must have a wider horizon than that offered by the local industries. Other conditions being equal, vocational guidance should favor constant occupations over localized ones. Vocational guidance must be prepared to challenge each industry intelligently, and on the basis of ascertained fact, and to demand of it that it show a clean bill of health with respect to such important factors as wages, hours, unemployment, and hygienic working conditions.

II. PRACTICAL, SCIENTIFIC, AND PROFESSIONAL PHASES OF VOCATIONAL GUIDANCE.

A.—LESSONS EUROPE HAS FOR US.

MEYER BLOOMFIELD,

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The different cities of England, Scotland, and Germany, particularly cities like Birmingham, Liverpool, York, London, Edinburgh, and Glasgow, have developed a vast machinery of service to tide over the transition from school to work, but it is my impression, after looking over the work with some care, that these communities have become too much engulfed in the transition problem of placement to give sufficient thought at the present time to a lessening of the causes which produce such a rush on the labor exchange. It is not a difficult matter to open an employment office and find jobs; and the fact that there are 400 labor exchanges in England is interesting and important only to this extent, that they have begun to organize the labor market—something we have not done in this country.

So far as there is an organization of the labor market, the work on the other side is praiseworthy. So far as the organization of the labor market has swallowed up the child market for labor without clearly differentiating the peculiar problems of children under 18 years of age, the plan is rather too big to be thoroughly effective from our vocational guidance viewpoint. They content themselves on the other side, particularly in Scotland, with seeing to it that all the children who are given places go to night school, to their so-called continuation schools. Their eagerness for night-school enrollment appears to have made them quite lose sight of a fact which we feel very strongly in America, that the only right time for children to be found in night schools is the day time.

Perhaps this great overdevelopment in England and Scotland may delay certain fundamental policies which legislation alone can effect. Nevertheless, this vast system of voluntary service of public-spirited women—there are 1,500 in Birmingham alone—and these vast nuclei of voluntary committees are educating a certain proportion of the English public to see the child problem in modern industry, and it is to be hoped that one of these days they may unload a good deal of

this detail and begin to ask, Why so busy in our labor exchanges? Then we should, indeed, be on common ground.

As to Germany, we have heard much about the continuation schools, which are, indeed, excellent. We have not heard, however, that some of the most thoughtful men and women in Germany have been agitating quietly and now are agitating openly for a system of vocational counseling to safeguard the part-time vocational schools. With all this system of efficient part-time training, it is as true in Germany as it is in England and in this country that the jobs which amount to nothing pay the highest wages and attract most of the children, and it is also true that the problem of the boy or girl in unskilled callings is hardly even considered.

It is interesting to note that in Bavaria, where the continuation schools are best known to us, the Social Democratic Party has in its recent convention written into its municipal platform a strong statement in favor of municipal vocational bureaus to serve, on the one hand, the schools which have not the economic contact, and, on the other, the labor bureaus which have not the social outlook. Within two or three years some of the directors of the municipal statistical offices, who are usually trained economists, have seen the gap between the elementary school and the continuation school. In three or four cities the directors of these offices have established what they call parent consultation hours. They have taken the valuable statistical material hitherto compiled only for the student and dealing with the labor market, apprenticeship, conditions of employment, demand for employment, and the rise and fall of wages, and they have made that information available to parents, children, teachers, and employers who resort to these offices for expert consultation.

I have not found, either in Germany or in England, any considerable recognition of the fact that the vast scheme of medical inspection and factory inspection misses fire at the point of most concern to us, the employment of the child. Since this is a world lack, I hope we shall all call attention to the need of so coordinating our medical inspection that it may be something more than a preventive of school epidemics; so that it may be something more than perfunctory; so that it may in time develop vocational specialists among the physicians, who are almost the most valuable persons at certain times in the whole scheme of vocational guidance.

Finally, the validity of any vocational scheme, whether abroad or here, may be tested by one very simple test: What does it mean to the child and its future? All vocational service takes its meaning from its relation to the child, not its transitory relation, not its statistical relation, but its fundamental relation of continued and far-sighted service. With these tests in mind, we shall be able to grade

the vocational lessons from Europe as some good, many indifferent, and many—I shall not say poor—but promising and incipient.¹

B.—PSYCHOLOGICAL TESTS IN VOCATIONAL GUIDANCE.

LEONARD P. AYRES, Ph. D.,

Director Division of Education, Russell Sage Foundation.

Psychological tests in vocational guidance are of two sorts. Those of the first sort have for their aim the selection of people for positions. Such tests are now being put into practical application in several occupations and industries. They vary in kind from the simplest sensory tests to complicated evaluations of complex mental operations.

Among the simplest of such tests are those for vision, hearing, and color discrimination given to all recruits in the Army, Navy, and Marine Corps. Similar, but more exacting, tests of the same sort are given to candidates for licenses as pilots and for positions as officers of ships.

Railroad employees, and in some cases those of street railways, are subjected to tests of vision, hearing, and color discrimination. In the case of the trainmen, the color discrimination tests result in the rejection of about 4 per cent of the applicants. The tests are repeated every two years for all the men and at intervals of six months for those suspected of defects in color discrimination. In all of these cases the tests have for their object merely the detection and rejection of unfit applicants.

In at least three industries psychological tests are in use that are more highly developed in character and have for their object the more difficult task of selecting from among all the applicants those best fitted to perform the work.

The first instance is the work of Mr. S. E. Thompson, who used reaction time tests in selecting girls for the work of inspecting for flaws the steel balls used in ball bearings. This work requires quick and keen perception accompanied by quick responsive action. Mr. Thompson measured the reaction time of all the girls and eliminated those who showed a long time between stimulus and reaction. The final outcome was that 35 girls did the work formerly done by 120; the accuracy of the work was increased by 66 per cent; the wages of the girls were doubled; the working-day decreased from 10½ hours to 8½ hours; and the profit of the factory was increased.

¹ For detailed information about vocational guidance in Europe, see Bulletin of the Bureau of Education, 1914, No. 4: *The School and the Start in Life*, by Meyer Bloomfield.

The second of the three cases is the work of Münsterberg, of Harvard, in testing street-car motormen with the object of selecting those least liable to be responsible for accidents. From several viewpoints this problem is of great practical importance, inasmuch as some electric railroad companies have as many as 50,000 accident indemnity cases a year, which involve an expense amounting in some cases to 13 per cent of the annual gross earnings.

The motormen were examined by means of a somewhat complicated laboratory apparatus constructed for the purpose of testing their powers of sustained attention and correct discrimination with respect to a rapidly changing panorama of objects, some moving at different rates of speed parallel to the line of vision of the subject, and others crossing it from right and left.

The results of the experiments showed that the tests were fairly accurate in sorting the motormen for efficiency as demonstrated by actual service. The tests require about 10 minutes for each individual. Even in their still unperfected form their application would result in the rejection of about 25 per cent of those who now are employed as motormen. There can be little doubt that this would result in a large reduction in the number of deaths and injuries from street-car accidents.

The third and last example of the application of psychological tests to the selection of employees in industry is the series of tests of telephone operators. These also were conducted by Münsterberg.

The American Telephone & Telegraph Co. employs some 23,000 operators. Applicants for positions are given a preliminary training of three months' duration in the company's schools, during which time they receive salaries. So many eventually prove unfitted for the work that more than a third leave within 6 months, involving a financial loss to the company of many thousands of dollars each year. The object of the tests was to develop methods whereby the unfit girls could be eliminated before, instead of after, entering the service.

The girls were examined with reference to memory, attention, general intelligence, space perception, rapidity of movement, accuracy of movement, and association. The results showed that the girls who gave the best results in the tests were most efficient in practical service, while those who stood at the foot of the list failed later and left the company's employ. It seems fair to conclude that when such tests are perfected, short examinations of a few minutes each will prevent thousands of applicants from wasting months of study and training in preparing for a vocation in which they can not succeed.¹

¹ The accounts of the tests of motormen and telephone girls are taken from *Psychology and Industrial Efficiency*, by Hugo Münsterberg, Houghton-Mifflin Co., Riverside Press, Cambridge, 1913.

In the cases so far reviewed the persons tested have been applicants for positions. With a somewhat different purpose Prof. James E. Lough, of New York University, has tested beginning students in stenography and typewriting to determine which ones possess the abilities which will enable them to succeed. The tests used are designed to measure the subject's ability in habit formation. The experiments are still under way, but already results have been secured which warrant the conclusion that a method has been devised which successfully separates the fit from the unfit candidates.

In addition to these cases in which psychological tests are being successfully applied to vocational problems, several pieces of experimentation are now under way to develop similar tests for marine officers. Ricker, of Harvard, has constructed apparatus for testing chauffeurs. Whipple, of Cornell, has done some work with tests for motormen. Seashore, of Iowa, has published a most careful study of tests of the ability of a singer. So far as is known, no work in this general field has been done in Europe.

All of the tests referred to up to this point are of the sort mentioned at the outset. All of them have as their purpose the selecting of persons for positions.

The second sort of psychological tests in vocational guidance are those having for their purpose the selecting of positions for persons. Up to the present time none has been developed, although expressions of a longing for them and faith that they will ultimately be discovered are features of the literature of the vocational guidance movement. Even definite attempts in this direction are few. In Chicago Dr. McMillan is doing some hopeful work. In Cincinnati Mrs. Woolley has records of tests of the intellectual abilities of 800 children and records of their industrial success or failure, and she hopes to correlate the two sets of data.

In various parts of the country vocational experts are at work who base their decisions not on the results of psychological tests, but rather on character diagnoses made from an inspection of the applicant and from a general evaluation of his answers to questions about himself. The defect of this method is that the questions are put for the purpose of revealing the personality of the subject, but since the replies can not be evaluated until the questioner has some basis for knowing with what degree of truth and significance they have been answered, the whole effort tends to move in a circle. Some of the experts who employ these methods unquestionably obtain good results, but until their tests become objective rather than merely observational and until the results are definitely recorded so that they can be accurately studied, it can not be claimed for them that they have attained the dignity of scientific status and reliability.

Nevertheless, the present situation is that we already have some tests for selecting people for positions and no tests for selecting positions for people. The reason is not far to seek; in one case the problem is vastly more simple than in the other. When we select people for a position, our problem is to sort out the more fit from among the applicants. This involves the development of methods for discovering the degree to which each candidate possesses the needed qualifications for one kind of work.

When the object is to select a position for a person, the problem is to discover which one of a vast number of possible sorts of work the person is best qualified to do. The difficulty arises from the almost unlimited number of possible alternatives.

At the present time we possess a rudimentary knowledge of the qualifications demanded in four occupations—those of inspector of bicycle balls, motorman, telephone operator, and typewriter. Moreover, in the cases of at least two of these occupations the tests required for even a rough sorting of the applicants are numerous, long, complex, and must be given by a trained psychologist.

Now the total number of separate classes of gainful occupations listed in the occupational index of the United States Census is 9,326, and many of them should be split into several subdivisions. This reveals something of the magnitude of the task of sorting children according to their vocational destinations.

Nor is the mere number of our occupations the only difficult feature to be faced. Modern industry is subdivided into occupations of which teachers and psychologists have, as a rule, slight knowledge. For example, if we open the occupational index to "S" we find a list like the following:

shooter	skimmer	sleever	smelter
shoveler	skinner	slider	smithier
silker	skiver	slipper	smoker
singer	slasher	slitter	smoother
sizer	slater	slubber	snapper
skeiner	slaughterer	slugger	soldier
skidder			

Now, when we propose to guide children into vocations, we must remember that large numbers of them are going into just such vocations as these. It is true that only a part of the 9,326 gainful occupations are available to the children of any one locality. It is also true that the same sorts of tests would undoubtedly serve for many different occupational examinations. Again, we must remember that we are using a false analogy when we refer to fitting square pegs into round holes in talking of vocational misfits; for people and positions are both plastic, not rigid, and much mutual change of form often takes place without injury to either person or position.

Nevertheless, even after all allowances are made, the inevitable conclusion remains that in vocational guidance the greatest field of immediate development for psychological tests is in choosing persons for positions rather than in selecting positions for persons.

The possibilities in the former field of effort are inspiring. When the best possible adjustment shall have been attained between work and workman, each one will have his full opportunity to achieve at least something for commonwealth and common weal; the tasks of the world will be better done and the workers will receive greater rewards, deeper joy, and fuller satisfaction in their doing.

C.—NECESSITY OF PROFESSIONAL TRAINING FOR VOCATIONAL COUNSELING.

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Reduced to its lowest terms, the chief work of the vocational counselor is to deal with individual persons who are in need of help in choosing a life career. There are, however, factors involved in doing this which make it expedient and necessary for him also to be no less a counselor for the vocations themselves on the one side and for the schools on the other. Of course, there is the great problem of the floating population, the vocational tramps, who need help periodically in getting jobs; but aid given them is essentially in the nature of the employment agent's work. His problem is to know opportunities for immediate employment and to connect the given job with a man who can do it. He gives no advice, counsel, or information save only that necessary to provide the employer with his man, the man with his job. The work of the counselor, however, is concerned much more with the choice of permanent life work. He is, therefore, dealing with a problem that is fundamental, both from the standpoint of the individual seeking his place in the world's work, and of the social world for which his work is to be done.

Whether one who assumes responsibility for such counsel should have professional training may be best answered by noting the elements of specific work which he is to do and the qualifications required to do it. Upon the efficacy of his counsel depends the weal or woe of many individuals and the consequent well-being or misfortune of the society these individuals serve.

Among the qualifications which seem to me to be necessary for successful counseling, I shall note specifically four which are inclusive of many minor elements. These are: Information, experience, appropriate personality, and capacity for constructive research.

The information definitely needed is of two types—that of the vocational world and that of people. It is manifestly impossible for any one person to know the details of all of the several thousand different kinds of work by which people maintain a livelihood, but it is possible to know something of each of the relatively small number of groups of vocations into which these may be classified on the basis of fundamental activities involved. First of all, there is the grouping into the five large divisions, the professional, the commercial, the agricultural, the industrial, and the household. Within each field are subdivisions rather well defined in some particulars. In turn, each of these subgroups is divisible into specific phases of work, making a total of several thousand different kinds of occupation. There are, however, many overlappings in these occupations from the standpoint of the activities and qualities required for efficient service. As a matter of fact, we know little that is of fundamental character in the classification of qualities for vocational success, nor of the activities that are fundamental in the vocations themselves. Viewed from this one standpoint the hit-or-miss, leap-in-the-dark quality of advice given by a counselor who does not even know the little now known and who has not the training and capacity for further discovery is quite apparent. The fundamental activities involved in the larger groups of vocations and their more important subdivisions the vocational counselor should know as the analytical chemist knows the elements, the families of elements, and the compounds of these elements and families of elements.

The counselor must know not only the more fundamental activities involved in these various fields and the personal qualifications required to conduct them, but he must also know the conditions of the occupations as they exist from time to time. The relationship between present and probable supply and demand, the relative wages, and the changes in methods, devices, and organization affecting the workers must all be more or less at his immediate command. Illustrations may be drawn readily from the fields of farming, commercial work, and manufacture to show that new inventions are constantly supplanting whole groups of workers, leaving them out of employment and unable to derive any help whatever from a technical training which may have been developed only through a long and devoted period. A current illustration of this is clearly evident in the commercial field. Stenographers have been in great demand, and means for preparing them have developed in response under both private and public auspices. If a young man or woman seems well adapted to this field, nothing is easier than to advise attendance upon a school appropriately fitting for such work, assuming that such a

school exists. But a disturbing factor immediately appears when it is learned that the dictaphone has begun an invasion of this field which points toward the early elimination of the stenographers from perhaps one-third to one-half of the offices in which they have heretofore been indispensable.

A knowledge of the initial wages in the various occupations is entirely inadequate for the purposes of the counselor. Possibilities for training, advancement, and increase in wages are altogether of more significance than are initial wages. There are hundreds of jobs that offer wages alluringly high for boys in their early teens, 16, 18, or even 20 cents an hour; but there is nothing in the work save the easily attained maximum of the 20 cents an hour. The end of the "blind alley" is reached. When manhood overtakes the worker in such a calling, he either morosely submits to a life sentence of dulling, monotonous drudgery with all that this implies, or he changes to some other occupation, rarely finding one with much more chance of growth or advancement than the first. Dissatisfaction leads him again to change, and the probability is strong that he will soon become a permanent member of the class of "job floaters" or "hoboes." All such occupations the counselor must know.

The counselor must likewise know in which vocations the capital for success lies primarily in manual skill, and in which it is chiefly a matter of vocational intelligence. In the transition from handicraft methods of manufacture to factory and machine production a whole generation of schoolmasters and not a few tradespeople have made the error of prescribing an effective method of training for an outgrown method of production without realizing that it was fundamentally defective in meeting the conditions for which they were presumably preparing. We all thank God and progress that the day of handicraft production has been supplanted by methods far more efficient, just as log cabins, kerosene lamps, hand-reaping machinery, and "prairie schooners" have been supplanted by inventions a hundredfold or a thousandfold more efficient. But the work of a thousand manual-training teachers in this country, fondly supposing themselves to be vocational trainers for present-day industry, shows how the factory system with its division of labor, its machine processes, and its applied science has entirely escaped them. If these and the authorities employing them have been so oblivious to conditions in the real world of industry, it behooves us to have a care that those counseling young people about to enter such callings should be alive to the world's work as it actually must be done by those taking up its problems. I count it a travesty upon our schools and a tragedy for

our boys and girls that a number of large hardware dealers in New York, who conduct supply houses for the whole country, carry a large stock of goods no longer used at all in the trades, but carried to meet the steady or even increasing demand of the manual-training departments and schools of the country.

The vocational counselor must also know people. In addition to the usual meaning which would attach to this statement, I mean that he must know how to use all of the means whereby he may be able to help the candidate to discover his vocational aptitudes and capacities and make the adjustment between these and the work appropriate for him. He must be able to make appropriate use of the tests and devices discovered by psychological research in the finding of individual differences and abilities; he must know the bearing upon the problem of race and national peculiarities, traditions, prejudices, and characteristics; he must know the influence of home and social settings and of previous experiences in determining motives, ambitions, and ideals; and he must know how to interpret those more or less elusive and intangible qualities that go to make up the thing we call personality. Thus to know people requires at least three factors: An intimate knowledge of the methods and values of making records and tests, together with their interpretation; a large background of experience in observing young people and workers in their work, in their homes, and in their social life; and a high degree of common sense or the ability to take the results of common observation and experience and from these to deduce quickly a valid judgment. This resulting judgment will seem to the casual observer a matter of intuition, but it is rather only the product of much knowledge, training, and experience reduced to terms by the instant and almost unconscious application of the expert.

Besides this crystalized experience, the counselor must be characterized by tact, decision, and unbounded human sympathy. He is to give advice, not orders. The candidate is to act as a free person, following counsel because of the appeal it makes to his ambition and sense of worth, not because of any sense of compulsion.

As a final qualification, I would add that of capacity for constructive research. Since human life, and notably vocational life, is in a state of constant change, the vocational counselor must be capable of making or of directing such lines of research and investigation as will insure his progressive familiarity with those changes to which adjustments of workers must be made. Furthermore, in our present state of poverty of knowledge relative to questions of fundamental importance in the classification of vocations and of the means for determining vocational aptitudes, the counselor will have the pressing

problem of initiating means of inquiry which will help to supply this much-needed information.

The relation of the counselor to the schools is of paramount importance. The needed changes revealed by his work must be wrought through the schools. When he looks at the conditions and needs of vocational life on the one hand and at the pitiable emptiness of the schools with reference to these needs on the other, his spirit must indeed be courageous and heroic, or it will shrink from a task that looks almost insuperable. Besides his own experiences, he reads in one of the most recent studies of the vocations entered by children between 14 and 16, based upon 4,386 St. Louis cases, that about 90 per cent entered unskilled occupations; about 7 per cent low-grade skilled occupations; and less than 3 per cent high-grade skilled occupations; that over 70 per cent of these children entered occupations demanding merely fetching and carrying—"blind alleys" in almost every case. Turning to the Massachusetts study of 1906, the New York study of 1911-12, the Cincinnati studies still in progress, the Philadelphia study of 1912-13, and to any others available, he finds this condition approximately true for the country at large. He reads that Charles H. Luddington, of the Curtis Publishing Co., Philadelphia, recently stated that:

Seventy-five applicants were interviewed for a recent vacancy in our typist force. At least 50 were obviously unfitted, and about 25 were tested before one competent worker was secured. To fill the position of correspondent, it is necessary for the Curtis Publishing Co. to interview from 10 to 50 persons; to find a stenographer, 15 to 25; a typist, 25 to 50; a high-grade clerk, 20 to 25; an ordinary clerk, 10 to 15. Whenever it is necessary to secure operators for our office appliances, which are generally used throughout the commercial world, we are obliged in 90 per cent of the cases to train them ourselves.

From these conditions in the vocations the counselor looks back to the schools. What are they doing about it all? Armies of children are dropping out, largely because the work makes no appeal of appreciable worth to them or their parents; occupations offering opportunity for growth and progress will not have them until they are 16. Counseling 100 children to enter vocations that will take but 3 is as foolish as it is vain; counseling them to go back to the schools from which they came is almost as foolish and usually quite as vain. To counsel the child to make the most of the occupation possible as a temporary measure and to take up part-time school work for entrance into an occupation that is more desirable when adequate maturity is reached appeals to the counselor as the most hopeful solution. But here arises the stone wall of ancient tradition, manned by the guns of academic schoolmasters and political boards of education, backed by a quiescent public opinion. The counselor realizes

that in most communities there are no schools, there is no school work which his honest conscience will permit him to advise as meeting the need. How long must this army of ambitious, capable boys and girls be allowed to go to the scrap heap of adult inefficiency, disappointment, and too often of pauperism and crime? How long must this army of tens of thousands ask for the bread of real, present-day life, of opportunity to prepare for gaining an adequate, respectable, and efficient living and citizenship, and be given the stones of academic gymnastics?

It is my faith that the vocational counselor, properly trained, will become the great force for bridging this gap between the vocational world and the schools. Timely, tactful, and, most of all, intelligent appeals to employers and school people (boards of education, superintendents, and teachers), revelation to them of facts, needs, and plans, should certainly be one of the most effective and far-reaching duties of the vocational counselor. To be sure, his immediate problem is partly an emergency problem—to do all that he possibly can to meet the specific needs of the individual candidates whom he is trying to aid. But if his work does not reach far enough into the vocational world, on the one hand, and into the schools on the other, to better conditions in both, to bring them closer together, and largely to remove the causes producing the emergency, then his efforts are just so much short of adequate success.

Can the vocational counselor achieve the success for which his position is established without professional training? In considering the problems of the counselor and the means and qualifications for meeting these problems, it seems to me that professional training is implied as essential at every point. His work is not a matter of a card-filing cabinet nor of the mere memory of facts. It is a work requiring trained judgment, intelligence trained to see the crucial point in a mass of complex data, a broad and intensive grasp of many complex social and psychological situations, and rigid training in the accurate interpretation of facts, conditions, and human qualities. Efficiency in these activities does not come by intuition alone nor by casual experience alone. Although every day's work of the counselor will be an asset in the work of the days following, training in every phase of the problem for which provision can be made will aid in eliminating waste from the beginning. It will save many a worker who would probably be wrecked on the rocks of misdirection. The problem comprehends the well-being of individuals, of vocations, of the school, and of society at large. For this significant work let us have men and women of the best possible professional training, that their efficiency may be in proportion to their responsibilities.

D.—THE PRESENT TREND OF VOCATIONAL GUIDANCE IN THE UNITED STATES.

HELEN T. WOOLLEY.

Director Child Labor Division, Cincinnati Public Schools, Cincinnati, Ohio.

The interest in vocational guidance in this country began with the problem of the misfits—those, chiefly adults, who had failed because they had gone into the wrong occupation. The work began, not in the schools, but in connection with social settlements; and the general attempt was to interview these people who had gone into the wrong occupations and to try to help them.

The general assumption which seemed to underlie these early efforts implied a sort of "niche" theory of vocational guidance. The idea was, apparently, that there were niches enough in society to go around; that the individuals were all right, but that they had been shuffled the wrong way, and some had fallen into the wrong niches. If one could simply find out where these mistakes had been made and reshuffle the people into the right niches, the problem would be solved.

It did not take long for both of those assumptions to break down. In the first place, it became evident that there are not enough of the right sort of niches in society. In the second place, it became evident that very many of these individuals who were coming for advice had failed not merely because they had been shuffled into the wrong niche, but very largely because they had been spoiled in the making. They were no longer fit for any respectable kind of a niche, and it was hopeless to try to fit them. It therefore came to be realized that there was a much more fundamental problem involved, and that this fundamental problem was really, in the first, how to avoid spoiling these individuals; and how, in the second place, to improve the quality of the niches awaiting them. In order to attack any such problem it was necessary to turn toward the public schools. In other words, the emphasis shifted in this field of vocational guidance very early, as it has shifted in nearly every field of social endeavor, from the curative point of view to the preventive point of view.

Accordingly, the leaders in the movement for vocational guidance turned toward the public schools, where are assembled a large mass of individuals in the making, and they said that to advise a child after he has left school what vocation he should follow is entirely too late. What we ought to do is to begin to advise him long enough before he leaves the school so that the school itself can do something to help him to fit himself for a proper vocation.

Then another point logically, if not chronologically, arises: There is little use in placing stress on advising the child as to the kind of work in life for which he ought to fit himself unless you can offer him

training for that work. So we get another shift on emphasis from mere vocational guidance to vocational training. Most of us have now reached the point where we are ready to insist that an adequate public-school system ought to have at its command courses of training for any legitimate occupation that a child should wish to follow; and we wish to find out some rational way of advising the children how to select their courses of training and consequently their future vocations. We realize that there are none of our school systems that come up to that ideal, but it is something to be at the point where we are all ready to agree as to the need. In other words, we have now reached the problem of ways and means.

Of course the most obvious demand is for an increased variety of instruction and for proportionately increased equipment in our public schools. We need more teachers and different kinds of teachers to present the various subjects which ought to be taught. But here, again, we come face to face with another practical problem. In order to decide intelligently just what kinds of training ought to be introduced into our schools, or at least to decide with what kinds we ought to begin, even if we grant that they all ought to be there ultimately, we need information of at least two kinds. We need, in the first place, a careful educational survey of the community; that is, we need to know what courses of training are already provided for in the community in question. We need such a survey as that made in Boston—a charting of all the educational opportunities of the community; because that might modify very markedly the initial steps toward introducing courses of training into the public-school systems.

We need, in the second place, an industrial survey. The industrial survey is a very difficult thing to make; it is a very difficult topic to deal with. Of course, a school has to take and does take the attitude of working for the welfare of the child and the community. It does not wish to introduce any courses of training into its system which would lead to occupations that are undesirable or injurious to the child. But it is not an easy matter to find out just what the good and the bad occupations are. We have some general information that applies. As to a few occupations, perhaps we know; as to a great many, particularly industrial occupations, we do not know exactly what the conditions are, whether they are such that the public school would be warranted in training workers for them or not, and we can only find out by making a careful industrial study of them.

I do not wish to lay down rules for making industrial surveys, but there are a few things that need to be avoided. In the first place we can not make an industrial survey satisfactorily by sending out cards to be filled out by employers, or even by interviewing employers. A great many employers are not willing to tell the truth about their

industries, or at least are not willing to tell the bad features. Again, the leaders of industry resent a demand for publicity; they insist that their business is their individual affair and that no one has a right to meddle with it. Further, employers often make their answers from a point of view so different from that of the questions that it is not easy to interpret them.

To make an industrial survey we have to consider both sides of the industry as an employment, and it seems to me absolutely necessary to interview a large number of individual employers to get weekly rates, average time unemployed, yearly income, average weekly wages for the year, etc. In order to do all that we need a staff of trained workers. It can not be done by the teachers in the schools, because they have not the time and they have not the experience.

There are various ways of getting industrial information other than by means of a survey. The ways we have at present are the continuation schools; the compulsory continuation schools, which keep our public schools in contact with the children in industries for a year or two; the system of registering changes of positions, such as we have in Ohio, which brings the children all back to the central office, where the information may be obtained; and then the placement work with a systematic "follow up."

There is great difference of opinion as to how early placement work ought to begin, as to whether it is wise at present to try to place beginners in industries at all; but I think we all agree that ultimately placement work is one of the things to look forward to. It is unquestionably a valuable means of getting just the kind of industrial information which the school needs so badly in deciding its courses of industrial training.

Then there is the further problem facing us of the form of instruction; how closely shall industrial courses be identified with the industry and how closely with the school. Is it safe to put the courses on a part-time system—a little bit of industrial instruction in the school and a little within the industry? Should we have separate industrial schools under different boards of education, or should the industrial courses be made an integral part of the public-school system? These are all problems on which we are at present taking somewhat different attitudes and on which we need more information.

Even if we did know what attitude to take about the form of industrial training, we should still be face to face with the problem of guidance; we should still have before us the question, how to sort the children in the schools into the various groups—which class to send into industry, which class into commercial work, which class into professional work, and which class into the academic group.

On what basis are we going to make any such decision as that; and just how is it to be done? Suppose we had teachers who were from

the start interested in a child's future career, interested in him as an individual; would those teachers without any further assistance be able to come to a wise decision as to advice in guiding that child? It is worth finding out how much assistance experimental psychology can render; we do not now know. Sometimes we talk about mental ability as though it was a very special kind of thing; we seem to assume that tucked away somewhere in each individual child there is some special aptitude which, if it could be ferreted out by any proper test, would decide the kind of occupation that child ought to take. Again, we talk about mental ability as though it were a very general quality which, if possessed by the individual, would fit him to follow any one of the higher types of occupation, and which, if lacking, would send the individual to one of the simpler and more mechanical occupations. Where between those extremes does the truth of the matter lie?

We often talk as though individuals were divided into two classes, some of whom should do mental work and some manual work. We talk about mind workers and hand workers, as though if a man works well with his hands he can not work well with his head, and vice versa. Is there any foundation for that assumption? In Cincinnati we tested 149 children with regard to their simple motor abilities and with regard to their mental abilities, and we found that those who are best in the mental tests are also, on the whole, best in the physical tests and in physical development. In so far as that evidence goes it would seem to show that there is not only no opposition between manual and mental ability, but that the two are much more likely to be correlated than opposed. Our reason for assuming that any child that can work well with his hands but not with his head ought perhaps to be assigned to handwork is really because that is all that is left for him. That is not, however, a safe basis for action.

There is also the study of occupations. In Cincinnati we have a man trained in experimental psychology who is making a study of the shoe industry. As he goes through the factories he pays special attention to the details of the occupation. There are some 200 different processes in each factory. He is trying to group them, to see what types of work are involved, and then to find out whether for each type of occupation it would be possible to devise tests which would separate the workers.

The women's work in a shoe factory is for the most part of a much simpler and more mechanical type than that of the men, and the only distinction he can find that seems to be of importance is the distinction between hand workers and machine workers. The foremen tell him that they find quite generally that the women who succeed at the machines do not like the handwork, and that those

who are best at the handwork are likely not to succeed at the machines. They believe that there is a natural difference between those who are most likely to succeed at handwork and those who are most likely to succeed at machine work.

Among the occupations for men in a shoe factory, one of the most skilled is that of a shoe cutter. The shoe cutter has the problem of taking a piece of leather and getting from it as many of the various parts for the shoe as he can. If there are any flaws, they must be placed in such a way that they will miss the cutting or be put in some part of the shoe where they will not spoil its appearance. The work must be done quickly and rapidly. If you ask the foremen or the employers what qualities are required for a shoe cutter, they all make the same answer: "Oh, that takes judgment!" This is not a very definite or specific answer, but it is characteristic. There are very few employers who are able to analyze their own jobs.

We realize in this country more and more that if vocational guidance is to be made effective, it must be through the schools. The great need is for more money for the public schools, and for three distinct purposes. In the first place we need more teachers and smaller classes even for the kind of work we are now giving. In the second place we need a far greater variety of instruction and the equipment that goes with it. In the third place we need departments of research both for economic information and for psychological information, which ought to be parts of the public-school systems.

III. VOCATIONAL GUIDANCE WITHIN THE PUBLIC SCHOOL SYSTEM.

A.—GUIDANCE BY MEANS OF A SYSTEM OF DIFFERENTIATED COURSES.

ALFRED P. FLETCHER,

Assistant Superintendent of Schools, Rochester, N. Y.

I shall attempt to answer four questions, hypothetical but definite. First: Is vocational guidance needed; and, if so, of what kind? Second: How can that vocational guidance be given? Third: Can it be given by means of differentiated courses of study? Fourth: How should such courses be organized?

The first question needs no answer; we all admit that vocational guidance is greatly needed. I should like, however, to cite two instances that prove it.

Last year the records of 4,708 boys and girls of Rochester were collected. A majority of these youths left school at the age of 14, from the seventh and eighth grades. They had been at work or out of work for periods of from one day to four years. The boy of two-years' working experience had averaged six jobs under six different employers. Since they left school over 80 per cent of the 4,700 children had done nothing that led up to the life work in which they were most interested. They surely needed vocational placement.

Three years ago, in the city of Bridgeport, I had occasion to advertise for an elevator boy. Thirty applied. Some of them had been out of work for months. All were mighty anxious to get that job, and at almost any wage. I sat at a table in the center of the schoolroom, with my hat off. The 30 boys came, one at a time, sat down at the table, and gave their experience and qualifications for the position. As the first half dozen were examined I noticed that no one of them took his hat off; so I resolved to give the position to the first boy who removed his hat as he sat and talked with me. No one of the 30 got the job. These boys all needed vocational guidance in applying for positions.

Vocational guidance is the selection of, the preparation for, and the placement in a life work. It should begin when the boy or girl first

begins to think about going to work and should continue until the boy or girl is securely placed in the chosen vocation. Let us think for a moment about vocational analysis and vocational selection. We are looking forward to the day when the psychologists will tell us how to analyze the boy so that we may know exactly what kind of work he is fitted for. I suppose, however, we must wait until the psychologists have themselves found out how to make these analyses. But even if we were able to say to a boy, "From a diagnosis of your case I have discovered that the thing you are best fitted for is the trade of patternmaking," it is certain that the average boy would say: "Go to, now, I am going to be something else. Right now I am going to take a job as messenger boy until I can get a chance in the thing I want."

We have heard a great deal in the last few years about fitting square pegs into round holes. Some of us have discovered that it is not an easy task to fit square pegs into square holes when the square pegs are self-willed American boys who do not wish to go into square holes. In the Old World about all that is necessary is to fit the boy to follow his father's trade, but here boys follow their mates and their whims. In one vocational school in Rochester, all of the boys who entered from Seward School, No. 19, wished to take up carpentry because one boy who was a leader came from that school and took up carpentry. From another, Andrews School, No. 9, every boy wished to be a plumber, and in a short time the school had more plumbers on hand than could be properly placed in good positions. Vocational selection was a game of "follow the leader." We must find some way to give the boy experience and interest in the vocation for which he is fitted.

I have been trying to imagine what a man would do if he were a director in a number of large industries and had a favorite nephew who looked to him for guidance. Mr. Director is to give vocational counsel to his nephew William. What shall he do?

Plan No. 1: Talk the matter over with William, select some one industry in which the opportunities seem to be good, go to the superintendent of that plant and say: "I wish you would try William for three months. At the end of that time, you, William, and I will decide whether or not he ought to remain and take up this business as a life work." Mr. Director goes to Europe and William goes to work. At the end of three months (assuming that William has stuck it out that long), Mr. Director talks with the superintendent and with William, and if the lad has made good and likes the work, the chances are that he will remain. If he had made a failure he is tried out in something else until he finally sticks. That is the method of trial and error, with emphasis on the error.

Plan No. 2. Mr. Director says:

William, I will secure for you a place in six or eight of the businesses in which I am interested. You may remain three months in each. At the end of two years I will get a report from all the foremen and superintendents for whom you have worked. You may decide which kind of work you like best. If the reports of your employers and your own inclination coincide I will try to place you in the kind of work selected.

Plan No. 2 has some decided advantages over plan No. 1. In the first place, in that William's chance to find himself does not come through his failure in a preceding job. The loss of self-confidence in repeated failure is too great a price to pay for vocational guidance. Again, in the second plan the boy has a background of experience on which to make an intelligent choice. Again and again teachers have heard boys say, as they began a new line of work, or as they completed a term's work, "I would like to do that kind of work all my life." But only as a boy looks back over a variety of experiences and compares them is he able to judge intelligently.

Now, every William has not an influential uncle who is a director in a dozen corporations; so we are selecting vocational counselors to assume that rôle. So far their reward comes in their high-sounding title and in the satisfaction of performing a needed work.

But vocational counselors must do more than counsel. Guidance and advice are not synonymous terms. Advice, even vocational advice, has some decided limitations. If advice does not coincide with the boy's preconceived ideas, it isn't heeded. If it does coincide, it isn't needed. Its value is doubtful in either case.

The next question is:

Can not the general industrial school, or the prevocational school, or the intermediate industrial school—whatever it may be called—give this vocational guidance? Can it not help the boy to select his life work? Can it not prepare him for his life work or, at least, begin the preparation? In other words, can not these schools do effectively the work outlined in Mr. Director's second plan? Can not this type of school select the fundamental elements of some of the most important industries, organize these into courses, and "try the boy out"?

I imagine that you are already formulating the question, What industries should be represented in such a course of study? That question is best answered by a survey of the vocational opportunities of a locality, and such a survey need not be exhaustive and expensive to be valuable. One survey, lasting three months and costing only \$300, gave material for the beginning of a good course in vocational preparation. Mr. Prosser has mentioned three essentials in a general industrial course for boys: Wood, metal, and power. A girls' school of this type would include the elements of home making as well as the elements of the common industries. I know of one course for boys which includes the elements of carpentry, cabinetmaking,

furniture making, pattern making, molding, casting and machine work, sheet-metal work, plating, printing, electrical wiring, motor maintenance and repair, salesmanship, and office practice.

May I anticipate your next two questions? Where can be found a jack-of-all-trades to teach such a course? Of what value is a course taught by a jack-of-all-trades, anyhow? The best answer to these questions has been given by Mr. McNary, of Springfield, Mass. Mr. McNary has tried out the plan of bringing in a journeyman from each trade to teach the elements of his craft. The plan has also been experimented with in other places. So far the results seem to show that both the regular shop instructor and the pupils profit greatly by this plan. The instructor and the journeyman working together can organize the subject matter so that it is brought down to the level of the pupil's comprehension. The pupils are greatly interested in the "practical" touch given by the work-a-day mechanic.

In one school the pupils have formed a corporation for the manufacture of all sorts of articles, and, although the pupils are not conscious of it, they are being "tried out" as they do the various kinds of work. After the costs of the materials have been deducted, the value of the labor and the profit are distributed as dividends—one half going to the school for the purchase of new equipment and the other half to the members of the corporation. The stock is purchased by salary checks paid to the pupils for work done. The possibilities for instruction of many kinds by such a plan are evident. I remember one boy who came to a trade school resolved to be a plumber. He could never have become a good plumber in a hundred years. Yet that boy after school could sell more copies of certain popular journals than any boy I ever saw. If a visitor came to the school, he would waylay him on the way out and sell him a copy. His instructors had to be watchful to avoid buying two copies of each issue. That boy was a born salesman, and the "corporation" plan of organization would have afforded him training in the line of his greatest ability. A classroom teacher whom I know has a typewriter and a mimeograph in his room and each year certain pupils naturally gravitate toward those machines. These pupils usually "find themselves" in the commercial high school.

A plan that is about to be tried out in an eastern city summarizes the points I have attempted to make. A survey of the youth of the city between the ages of 14 and 18 has been made, so that it is definitely known where pupils go when they leave school. A survey of the industries has been made so that it is known, first, what preparation is needed for each line of work in each industry; second, what kind of continuation or part-time instruction is needed to secure promotion in each line of work.

With the help of the employers, short "try-out" courses are being organized in many lines of work. When a pupil finds himself or herself in one of these "try-out" courses, this course extended becomes a preparatory vocational course. When the course is completed the shop instructor assumes the responsibility of placement.

One more point. I know one manufacturer who keeps only 10 per cent of the persons he tries out. Relieved of this "try-out" process, which is vocational analysis from the employer's point of view, that employer would be able to pay a much higher initial wage to the 10 per cent selected for him than he could pay to the 100 per cent whom he must try out. It is this higher initial wage that will hold pupils in school long enough for us to give them real vocational guidance.

B.—GUIDANCE BY SYSTEMATIC COURSES OF INSTRUCTION IN VOCATIONAL OPPORTUNITIES AND PERSONAL CHARACTERISTICS.

F. M. GILES,

Principal of De Kalb Township High School, De Kalb, Ill.

What I shall describe is a practical experiment in vocational guidance that we have been carrying on in our town for a number of years. Ours is a town of about 10,000 people, a manufacturing center, with definite agricultural, commercial, and professional elements. Although the work was designed for this community, its elements are such that it might be adapted to towns of larger or smaller size.

We undertook this problem of guidance for the following reasons: We felt that we were sending students into the world with very little understanding of the vocations into which they were to go, and with very little idea of the meaning of the industrial world about them. We felt that guidance was a practical problem that demanded immediate action; that we could not wait till a perfect system for guidance was devised, but that we must do something at once.

In taking up our task we decided, first of all, that we ought to know our school from an occupational point of view. Accordingly, we took a survey to find how many different prospective occupations were represented among our students. Perhaps some figures of the results of the survey will be of interest. We found that about 30 per cent of our students had made no choice of an occupation. Here was a problem—to find material for these children which might help them to make an intelligent decision. Next, we discovered that about 23 per cent of all the students, or about 50 per cent of the girls, were going into teaching.¹ Here was another definite

¹ It should be remembered that Northern Illinois State Normal University is located in this town, which accounts for these figures.

group to be considered in any guidance work. Our next largest group was bookkeeping and stenography, with 10 per cent choosing these occupations. Next was agriculture, with 8 per cent; and then came engineering, toward which about 5 per cent of the boys were aiming. Then, in smaller groups, came the machine trades, music, and, finally, a number of scattering occupations.

We had gathered some definite facts which would be of help to us in planning our school work, but we had found also that we had a complicated problem if we were to prepare people definitely for the 24 different occupations represented in our survey.

The next problem was, Could we use our school as a laboratory to help different vocational courses? Could we organize it so that the curriculum would represent in a general way some of the great groups of industry, such as commercial work, trade work, agricultural work, professional work, and domestic arts? Would it not be advisable to let each of our vocational teachers become a specialist in the industrial conditions in his line in our community? For instance, would it not be worth while to ask our commercial man to become thoroughly familiar with commercial conditions in De Kalb; our manual training man, with trade conditions; our agricultural man, with farm conditions; the principal, with professional conditions?

With this idea in mind, we began to study our community, and we devised several blank forms for the purpose of making a survey. For instance, we had what we call our industrial blank, by means of which we made a sort of survey of the industrial conditions in the community. We asked the employer to tell us how many boys he employed; at what wages they were employed; what he paid his men. Then we asked some general questions, as, Are boys deficient in shop work, in mechanical drawing, in book work, or in character qualities?

On our commercial blank we asked the employers questions related to commercial lines, such as the wages paid in stores, the chance of advancement, whether boys were deficient in penmanship, spelling, arithmetic, business training.

To get at these facts in trade lines, we asked our manual-training teacher to go out into the community, from shop to shop and to get, as far as possible, answers to the questions indicated above; our commercial man was to do the same in the stores. We found very soon that we got better results by going to the shop foremen than we did by going to the heads of the business.

We found, for instance, in the commercial investigation, that the things demanded were practically three. Nearly every employer asked that boys be trained thoroughly in penmanship, spelling, and arithmetic. Some employers asked for salesmanship as an additional training, and a few asked for certain character qualities, such as

trustworthiness and courtesy. A few employers were decidedly critical, and reported boys as lacking almost all desirable qualities.

As to the pay, we found that in general it was quite low; and I suppose this is true of the average small city. It varied in the commercial work from a beginning wage of \$4 a week for girls to about \$6 or \$8 a week for girls with experience; and for boys, from \$4 a week up for beginners, to \$10 or \$12 in some of the higher classes of salesmanship. In the trades we found the wages paid boys were from \$5 a week up to 19 cents an hour.

Now, what did our investigation show as to the industrial training demanded by the average employer? We found, somewhat to our surprise, that the majority of the shops did not demand a very high training. In general, the foremen stated three things as requisites. They would like to have a boy able to run a drill press, to read a mechanical drawing, and to read a micrometer caliper. Several of the men stated that the boys lacked perseverance. They said that they put a boy on a drill press and that he would stay only about three months.

Finally, what general estimate can we make as to the value of this survey? The greatest value, undoubtedly, was that it gave us a definite knowledge of our town as an industrial community, of the pay offered in various lines, the requirements in the way of training, the opportunity to advance. We are in a position to talk facts when advising a student as to opportunities in De Kalb. It has shown us also that in the smaller towns there are few positions open to the boy, and that promotion is, in general, slow. We see why so many of our students seek the larger cities. Secondly, it has helped our instructors of vocational subjects by giving them an accurate knowledge of shop conditions and demands. This I consider very valuable. It has shown us also that there is not such a demand for skilled or technical training as we thought. We are faced with the problem whether, so to speak, we shall train the boys for unskilled jobs or whether we shall train them for positions out of town.

So much for our preliminary work. We had now, undoubtedly, a better understanding of our school and of our community. The problem was now to give to our students in some way more adequate knowledge of industrial life in De Kalb and of the industrial world as a whole. In carrying out this aspect of the work, the principal planned to meet the upper classes once a week in what we call our "general assembly period." During this time we would talk over with them industrial conditions as related to the choice of a vocation. We realized that a difficult problem confronted us, as we had a big industrial world, with some 9,000 different kinds of jobs in it. But we felt that these different jobs could be classified, and that in

a general way the individual could decide the direction in which he would like to go.

Our plan now is to meet a class of from 40 to 50 once a week for a period of a year or more and talk to them definitely upon industrial conditions. The purpose of these talks is to help the students to see the organization in the business world and to understand something of the industrial life about them with the idea that they may decide more intelligently upon the occupation in which they will make a living.

Their decision as to an occupation should rest, they are told, upon two things: First, knowledge of themselves and their abilities; second, knowledge of social conditions.

You can find out something in regard to your ability by your success in school in the various courses. About other conditions you probably have little knowledge. You will find, for instance, that some occupations are tremendously overcrowded. Other occupations have disadvantages as to working conditions or working hours. These are facts that you ought to know before you choose an occupation. We can not talk to you about all the great occupations to be found in the business world, but we can classify the occupations into great groups, and by considering the qualifications required in these great groups you will be helped somewhat to make a decision on the choice of an occupation. These groups, which we shall discuss from week to week, are as follows: Mercantile, manufacturing, and mechanical; railroads; agriculture; banking; Government service; personal service; the home.

The outline as given above is used as a basis for several talks with the class. In this connection I use diagrams to show the relations of the occupations and figures from the census to show the number of people earning their living in the different occupations. The purpose of these discussions, as I sometimes tell the students, is to give them a bird's-eye view of industry. It is doing in a certain way what Franklin's father did when he took his boy to some of the industries in Boston in order that the boy might more intelligently make a choice of his life work.

After the introductory talks we discuss in detail the characteristics of these groups mentioned before. Let us take as an example of this work a brief discussion of the manufacturing and mechanical group. We consider it first from our De Kalb conditions in order to make it concrete. The manufacturing and mechanical industries in De Kalb are pointed out—certain iron and steel industries, such as gas-engine works, cream-separator works, wire mills, refrigerating-machine factories, foundries, and blacksmith shops; certain wood industries, such as wagon works and planing mills; certain building trades, such as carpentry, plumbing, gas fitting; and certain leather trades, such as the glove factory.

These industries are all grouped together because they deal with the manufacturing and handling of materials. There are, I think,

certain tests by which a boy may tell whether he has ability in this line. For instance, in the mechanical trades, mechanical skill is a fundamental requisite. A boy must have the necessary skill to handle materials deftly. Next, he must have a liking for machines and power. He must have some inventiveness in making things. He should have some skill in mechanical drawing and be willing to learn the trade which lies at the basis of the industry into which he is going. He should not be afraid of hard and dirty work. He should be willing to put on overalls and get his hands dirty if necessary. Finally, he should try, if possible, to get the technical-school training, which is the basis of his trade.

To make this work concrete I try to find as many illustrations from actual life as possible, clipping constantly from the magazines for current material and preserving it in a scrapbook.

After we have discussed the general conditions of this group we bring up the question as to how the individual is to know whether or not he has the necessary skill to succeed in mechanical lines. We tell him that our school courses are planned to help him to decide for himself.

For instance, if you think your ability lies in the direction of mechanical trades, take the work in the manual-training shop and try out some of the courses which are offered in woodwork, metal work, printing, gas-engine work. If you find that your interest is aroused and sustained, that you have skill to do good work in the school shop, you have some indication of your ability. You may, further, use your summer vacations to good purpose by getting a place in some of our shops and finding out whether you really like the work which is carried on in them.

It will be noticed that we do not decide for the individual. We throw the burden back upon the student. Our purpose is to furnish the individual with the material for a more intelligent decision, not to make the decision for him.

Another great division in occupations to which I call the attention of our students is that between business and the professions. I call their attention to the fact that about 29 people gain a living in business to 1 who gains a living in the professions. Hence high-school students who contemplate going into the professions must consider certain things—first, whether they can get the necessary training through four, six, or eight years. They must consider whether they have the capital to get this training and to go through the usual starvation period that comes to the young doctor, lawyer, or architect after he has finished his course. They must consider whether they are interested in social service, for I believe that the professions demand a certain amount of service. They must consider, also, whether they are of a studious disposition, for to-day in law, medicine, teaching, engineering, the individual must be a constant student to keep up

with the advance in his work. These are some of the general qualifications discussed in reference to the professions.

Then we treat, in some detail, the principal professions, such as law, medicine, teaching, engineering. We treat engineering in some detail because so many high-school boys have ambitions in that direction—some, who, so far as their success in school would show, have no talent for the profession. We try to show that the basis for success in engineering lies in mathematical and mechanical skill. Prospective students of engineering are asked to look over such a book as McCullough's "Engineering as a Vocation."

Just this year a couple of boys who were thinking of engineering came to me and asked for information along that line. I asked them to take this book and read it in the light of the discussions we had had. They both came to me a little later and said: "We have come to the conclusion that we would not care for engineering as a vocation. We had no idea that it involved taking higher mathematics, physics, and things like that." This is a practical illustration of the guidance work.

We now come to the second part of our work in guidance, which the program calls personal characteristics, but which I like to think of more as applied ethics. In this part of the work it is impressed on the students that certain qualifications are needed in whatever line they may enter, because they are fundamental to success. These things are attractive personality, practical efficiency, upright character, loyalty. I call their attention to a card which says: "The face you wear at 60 depends upon what you do to-day." Now, what is the reason for this statement? The reason is that youth is the plastic period. This is the period in which we acquire and absorb. It is the period of education. We can make ourselves now very nearly what we desire. A little later our habits will be fixed and we shall find it difficult to change them. It is worth while, then, to have some ideals of personal qualifications and to endeavor to make ourselves like our ideals.

Personality is treated as involving voice, dress, manner, courtesy, tact. In talking to students about courtesy we use this little card, which reads: "Politeness is like an air cushion; there may be nothing in it, but it eases the jolts wonderfully."

When you apply for a position, how do you act when you enter the office? If there is but one seat left and several people are waiting, do you take the empty seat, without considering the others? When leaving the office, do you allow your employer to go first, or do you step ahead of him? On the other hand, suppose some of you go to college instead of into business. You think perhaps your manners will not be observed. Here is what the college editor wrote about the freshmen whom he noticed on the campus: "They do not know better than to walk around with toothpicks in their mouths; they do not know enough

to tip their hats to a lady; and they gurgle when they eat their soup." You see, you are being judged in this matter, whether you are in college or whether you are at work.

I often have the experience that for the next two or three days after talking to a class I find the pupils exceedingly polite when they meet me. They bow deeply; and if I happen to come to the school door with one of them, with great courtesy I am allowed to step through first. This is a small item, to be sure, but it seems to me that they are applying some of the things that have been said to them.

After personality we consider efficiency. What is meant by efficiency to-day? Efficiency is much more than physical; it is largely, if not chiefly, mental. As a striking example of mental efficiency attention is called to the president of one of our great industrial companies. Here is a man who has achieved great success because of his wonderful mentality, his ability to recognize conditions and to do things skillfully, quickly, and accurately.

Then we go a little deeper into our problem of practical ethics. It is pointed out that, besides a pleasant personality and efficiency, there is a demand for certain elements of character. As a basis for talking to them about the elements of character needed in business, the rules that Cyrus Simmons used are read to them. Most of you are familiar with them, no doubt. They contain some moral truths in epigrammatic form. For instance: "Don't lie; it wastes my time and yours." "Don't do anything that hurts your self-respect." "It is none of my business what you do at night, but if dissipation affects what you do the next day, and you do half as much as I demand, you will last half as long as you hoped."

I offer this experiment in vocational guidance not as a panacea, but as an effort to solve the problem in the average high school. I believe it is working effectively to some degree, because we have saved some students from places where they were misfits, and we have helped others to places where they fit. We have guided some boys out of blind-alley jobs. We maintain a sort of an employment bureau in the school and encourage employers to call upon us for help. A few months ago we had a call for a draftsman. Our records showed a boy working as an errand boy who had developed considerable skill as a draftsman while in school. We secured the drafting position for this boy, and he is one of the happiest boys in town because of his success in his work. He has been promoted twice since he obtained the position, and he recently came to school to tell me that this is the greatest thing the school had done for him. He can not get over the fact that we helped him after he had left.

Again, from the character side, I believe the work is worth while. We get a certain amount of school pride in this way that we have not been able to get in other ways. It seems to me we must introduce

our ethics in some concrete and vital way, so that the ideals will take hold. I believe this instruction in personal characteristics accomplishes the work.

C.—GUIDANCE BY THE DEVELOPMENT OF PLACEMENT AND FOLLOW-UP WORK.

SOPHONISBA P. BRECKENRIDGE,

Chicago, Ill.

I bring a very limited contribution to this discussion. I come to report upon an undertaking in Chicago having to do with a very definite group of children. They were limited in number, since we have never had more than five workers, but it is not the small number served (2,186 between October 1, 1912, and October 1, 1913) which is significant here; it is the definite limitations set about the kind of child to be served, for the group of whom I speak consists of 25,000 children between 14 and 16 years old who have left school to go to work.

I do not think that on that account the report is less important. I think, in fact, that the subject will gain and not lose by being presented in relation to well-defined groups of children. It is impossible, in my judgment, to discuss profitably together the college student who looks forward to a professional career, the high-school pupil about to graduate whose uncle might be a director of nine corporations or even of one corporation, the eighth-grade graduate from the home of the skilled artisan, and the third, fourth, fifth, and sixth grade children from poor homes who leave school at the earliest moment allowed by the law and try to find employment. The discussion of the first two groups may possibly be a discussion of an educational problem, involving choice of career and organization of course of study; the discussion of the third group may be a discussion of new sources of information to be tapped by the school in readjusting its curriculum to the needs of the children in a modern industrial community. The discussion of the fourth group in relation to their employment is no discussion of program of study or choice of career. It is neither present organization of curriculum, nor pedagogy, nor guidance. It is a proposed guardianship of children for which the school is the best agency at hand.

Obviously as conditions of living become more pressing and more complex, the school to whom the community entrusts the child for from seven to nine years by its compulsory attendance laws is going to be called on to perform more and more of these services which are services of guardianship and not of instruction. The proper classification of the children in accordance with their mental qualifications (child-study departments), and the maintenance of an adequate

physical well-being (school medical service and school nursing), are services related to education but easily distinguishable from education; they represent services growing out of the position of the school as suitable guardian rather than out of its narrower educational function.

I say nothing of the high-school pupil, nor even of the eighth-grade graduate; but in serving the children who leave before completing the eighth grade to go to work the school is rendering this kind of service. I believe that the school, which is supposed to have its eye single to the well-being of the child, is the proper social agency to exercise this guardianship. It can not, however, exercise it alone. Industry must be called on to cooperate, and the general public, which is concerned for the well-being of the child, concerned for the continued prosperity of industry, concerned for the protection of family integrity, must cooperate. But in my judgment the school should take the initiative and retain the lead in this cooperative effort. Such has, I know, not always been the case. In London the "skilled apprenticeship committees," which inaugurated the effort there, devised the method afterwards adopted by the juvenile labor exchanges, which have themselves extended its use in London and inaugurated similar efforts in other English cities; but in Edinburgh it came from the school, as it should in any community where the work is yet to be begun. This does not mean that the work should be done by teachers, any more than that the nursing, medical inspection, mental testing, all of them dependent on the teachers for cooperation, but performed by independent professional staffs, should be laid upon the teachers. The better the teachers the less should they be diverted from their own profession to tasks for which they are not qualified.

To turn, then, to the experiment which we have been working out in Chicago, it has been made in the effort to serve the children who leave school at the earliest moment allowed by law, to go to work. Each year about 12,000 of these 14-year-old children take out their "working papers," the age and school certificates prescribed by the child-labor law. During the year 1912-13 there were 12,583 of these children; so that we have always about 25,000 children under the age which the law names as the upper limit of the compulsory attendance age. The Illinois statute says that children between 7 and 16 years of age must be in school unless out of school for some one of several recognized excuses, one of which is, if the child is between 14 and 16, being necessarily and lawfully employed. Now, we claim that if this necessary and lawful employment is accepted as an alternative to school, the school should make sure that it is as nearly as possible a true substitute in what it means to the child. That involves supervision of the child in finding his first work, and supervision of the child in his early working life. This means, of

course, placement—the placing the child in what one would like to call the best job available, and what one must call the least demoralizing job available. No one thinks that there are suitable jobs for these children. No one thinks that children under 16 years of age should be in the labor market as industry is organized to-day. Everyone knows that many of the positions are connected with blind-alley and dead-end trades. No one thinks that at the present time the thing that should be done for every child in the community can be done for even a small fraction of these children—enable them to spend these two invaluable years either in a school or at a trade which is more educational than the school and educational in many ways besides industrial efficiency. It is an easy solution of the question to say that since we can not do all we would for these children, we will do nothing; it is perfectly simple to adopt the maxim of the law, “What should be done will be presumed to have been done.” Since children under 16 should have been removed from the labor market, they will be presumed to have been removed from the labor market. That presumption seems to me to be possible only to one who knows nothing by actual contact with these children’s lives. The question is not whether we can do all that we would for these children. The question is whether we can do more for them than they can do for themselves. If we can, they have a right to demand that we do all we can. Because, however, we can do so little compared with what should be done, we in Chicago were unwilling to call our experiment by an ambitious title like vocational guidance. Instead we selected the title “Employment supervision,” which indicated our supervision, not their choice.

The problem then has to do with children whom the law permits to leave school; whose parents are very poor; who come from a group which has never before been either held up to the standard implied by seven years of schooling nor indeed suffered to raise themselves to that standard, and therefore expects its children to stop school as soon as possible and to begin to earn. This does not mean that the members of this group are unworthy as parents, nor that they are dependent in any way. It means only that they are forced by the compulsory education law to a higher level of child care than before. With these children and these parents there are, too, the jobs—only about half enough of them if they were all good—and many of them are most undesirable. By hunting, however, some can be found which are not so bad as jobs, and others which, while bad as jobs, are under good foremen, who will help the child to wring at least discipline, responsibility, and regularity out of the experience.

Placement work of this kind is clearly very different from the guidance that selects the child for the job. Here the child must,

of course, be able to do the work, and there must be a chance of continued employment. But, at least, the job is selected for the child, not the child for the job, which makes all the difference.

This requires, as a preliminary step, investigation of a very high order; quick, skillful selection of possible trades—the selection based on a real intelligence of the children's possibilities and needs; then, equally rapid, accurate, and intelligent investigation of the selected trades. For these investigations qualifications of a high order are necessary. Their high-water level is perhaps reached in the studies made by Miss Collet and Mr. Aves, of the British board of trade, for the London juvenile labor exchanges—not dull and wasteful repetition and enumeration, but close, intelligent observation, applied to an adequate number of establishments to answer the two questions: (1) Can the trade be included in the list? (2) Can the establishment be used as a place of employment for these children?

Needless to say, the most skilled investigator who is only an investigator is not only useless but probably misleading in these preliminary inquiries. The work is not pedagogical in any respect. It is a high grade of personal service rendered in what one might call a program of social treatment. It means obtaining the information about the trade; it means learning what the child wants; it means finding out what the parents' aspirations and plans are, and cooperating with them where possible, and explaining, where cooperation is impossible, why it is impossible; it means learning as well as may be whether the employment is "necessary" in any true sense. For example, a very considerable proportion of the children who have come to us—225 out of the 2,186 last year, of whom only 850 came directly from the school—have been returned to school, either to the one which had been left or to one which would serve the child's needs better. It means often, when the child's chances for better employment depend on instruction as to personal habits—cleanliness of hair in the case of girls, for example—giving the instruction which interprets those habits in terms that the child and the parents can understand. It means, if the child's physical condition is below normal, securing a week in the country, or the minor operation which is necessary. It means innumerable personal services which make it possible for the child to avail himself or herself of opportunities closed by barriers as slight as those I have mentioned.

Furthermore, it means following the child into his work and holding him to it. For these children are children; and if a Polish boy will not work next a Bohemian boy without fighting, the foreman may be willing to place them far apart from each other for a while at any rate, until they can be reasoned with. If they are placed in shops that seem good and the foremen mean to do right, the weight of the loads they carry may be lightened, the speed at which the work

is done may be lessened, and the condition of all the children may be improved because you were there to interpret the needs of some. Foremen are human. Many things that are wrong are wrong because attention has not been called to them; and things look very different to one's own eyes when one knows that an outsider is looking at them, too. And this experience is good for the foreman.

So much for the value of the work from the point of view of the children. In my judgment this is only one side of its importance. It serves, by way of personal service, this limited group of children.

From the point of view of learning what should be done by the school in the way of preparing all children who are going into industry it is invaluable. It is, in my judgment, not only a valuable method of investigation—it is the only sound guide to modifications of the school curriculum in that direction. There may be all the surveys in the world; you may ask employers what they want until the end of time; you may look at processes and repeat them in school shops; but you can not learn what demands are really made by industry on young persons unless you go with them through their experience in industry. On that account, the proposal that Chicago, a community where the organization of industry after the principles of the factory system, including the use of machinery and the subdivision of tasks, has been carried to an extreme, should adopt methods successful in Germany, where that development has been at a very different rate and in different directions—such a proposal seems to one who looks at the situation from a real knowledge of these children's experiences and prospects as nothing short of absurd. The school can learn in this way without abusing its trust what it can do to fit children for the industrial life into which they go, and at what point it must stand absolutely firm and say to industry it will do nothing to fit its children for conditions so far from human—work “which a monkey could do, if it could be kept at it.” It can learn by this placement and follow-up work, and only, in my judgment, by this work, skillfully done, honestly recorded, and courageously interpreted, what it needs for its own constructive advance and on what terms it will demand and then force concessions and modifications on the part of industry.

On such a basis, wise and well thought-out plans for changes in the curriculum can be made. The intelligence thus secured, the clarity of vision, adds enormously to the skill with which the more fortunate children who can “go through” eighth grade or even the high school will be handled. We have taken over many things learned from the care of delinquent children into the care of good children; many experiments with the subnormal point the way to more efficient service of the normal; and when I have been exasperated at much of the nonsense written about “counseling” eighth-grade and

high-school children, I have admonished myself to be patient and to remember that not very much could be expected even of principals in a community which had never had the chance really to look at the problem through the eyes of the children and young people it is honestly trying to serve.

D.—DEVELOPING PLACEMENT AND FOLLOW-UP WORK.

CHARLES MARTIN,

Director of Industrial Arts, Jewish Orphan Asylum, Cleveland, Ohio.

Some of the problems confronting proper placement and follow-up work are that (1) children drift aimlessly about from one position to another; (2) children are almost wholly lacking in any intelligent knowledge of the industries in the community; (3) child labor between the ages of 14 and 16 has practically no economic value to society.

The habit of aimless drifting from one position to another is especially true of those children who leave school before they complete the elementary grades. They lack intelligent supervision, and are often tempted by ease, fairly good wages, and a sense of independence to crowd those occupations which require no skill and promise no future. Their moral and intellectual powers are weakened. Their school knowledge is soon dissipated, and they become unfit either for employment or for further education. Their parents are without adequate knowledge to guide and advise them. Too often they feel concerned mainly in having the children "earn something" at the earliest possible moment. The immediate wage is considered rather than the development of the child's best gifts.

The years between the ages of 14 and 16 are not productive to the industrial world, because the boy or girl is immature physically, mentally, and morally. Grit, mental energy, endurance, and power of concentration are not yet trained and developed. In order that the public-school system may develop placement and follow-up work, it is essential that the pupil be properly developed physically, mentally, and morally to enter the world of labor. It is necessary that the pupils have careful supervision, and training between the ages of 14 and 18—these years that are so vital for the formation of character and for the production of skilled and efficient workmen. Children should be guarded against exploitation. They should have healthy surroundings, just treatment, legal working hours, and an opportunity to advance in an employment that is congenial and that will provide a living wage without overwork. This guidance and protection should continue until they are established as self-dependent earners in the world of labor.

Many opportunities are open to the public-school system to assist in the solution of the problems incident to proper placement and follow-up work. Teachers have the opportunity for careful study of the personal characteristics of each pupil. A permanent record of these characteristics can be used as a basis for the placement and follow-up work. The school studies and shopwork are vitalized by direct contact with the occupations of the community, thus aiding the pupil to realize the value of the school studies and their close relationship to the world of labor.

Some of the necessary requirements for the development of intelligent placement and follow-up work in the public-school system are: (1) Securing a permanent record of the child's personal characteristics and special aptitudes; (2) educational guidance during the school life of the pupils in order that they may be given the proper opportunity to develop physically, mentally, and morally; (3) offering the pupils opportunities for continued education after they have entered the world of labor; (4) imparting to the pupils a knowledge of the world of labor, especially a knowledge of the principal occupations of the community; (5) securing the confidence and cooperation of the public; (6) the establishment of a juvenile employment bureau under the direct control of the school board and working in cooperation with the industries.

Estimates of the pupils' personal characteristics and aptitudes should be based on careful study and should cover a long period of time. They should represent the combined judgment of the school medical officer, and of the teachers who come in contact with the pupil. The school medical officer should enter on the pupil's card the general nature of the employment suited to the pupil, with special remarks as to unsuitable occupations. These records, containing the decisions of the medical officer and the teachers, would place the pupil in one of the broad classes of occupations and thus assist in the choice of a vocation or employment. This record-card system would lessen the habit of aimless drifting and would decrease the number of misfits in the world of labor.

Efficiency and success in one's work are largely dependent upon knowing one's ability and adapting oneself to environment. An opportunity should be given to the pupils to discover their dormant powers before they are compelled to leave the shelter of the school-room and take their place among the world's army of workers. A system of differentiated courses in a commercial or industrial school for seventh and eighth grade boys would aid the pupils in discovering their mechanical, commercial, and artistic tendencies. At least half the school time should be devoted to laboratory and shop work. With the discovery of the pupils' tendencies would come a definite

aim in life. The primary importance of such a commercial industrial school is that it would give the pupils the opportunity to try themselves out in different kinds of work. Such a school would aid the pupils who are compelled to leave school at the age limit, and also aid those pupils who are trying to decide whether they will enter the academic, commercial, or technical high school.

The influence of the public-school system should go with the pupil into the world of labor. The pupil should be impressed with the fact that his education does not end with his school days. He should be taught the value of using leisure time for studying as an asset for future advancement. He should be informed by lectures and educational charts as to the opportunities that the community offers for continued education. Stereopticon lectures and a course in economic history and geography dealing mainly with the occupations and their requirements are helpful.

Parents, as a rule, are willing to cooperate if they are convinced that further schooling is worth the sacrifice that they are required to make. They should be advised as to the occupations for which their sons and daughters are best fitted when they leave the school and as to the chances of earning good wages. Employers of labor should be educated as to the aim and efforts of the public-school system's placement and follow-up work. By reporting vacancies, stating the requirements, rate of wages, and future prospects, by suggesting ways of closely relating the industries and school studies, they can give valuable aid. As a rule, the employers of labor are willing to cooperate with the public-school system. The cooperation of churches, social settlements, boys' and girls' clubs, Young Men's Christian Associations, and Young Women's Christian Associations are also valuable.

The juvenile employment bureau should be under the direct control of the school board, with offices in the board of education building. The details of its organization would depend upon the local conditions. Its duties are to advise and to follow up the young persons in their occupations; to keep the educational system in close touch with the local industries; to collect and promulgate general information in regard to industrial conditions. The director at the head of the employment bureau should be appointed by the school board. The advisory committee should be composed of representatives of educators, representatives of public bodies, of trade associations, and of employers of labor. There should be counselors representing the various schools. If teachers are used as counselors, they should be properly trained, and they should have time for the work.

Volunteer men and women workers, representing the different industries of the community, are needed to follow the young persons into the industries and to give them advice and supervision.

E.—THE CONTINUATION SCHOOLS OF CINCINNATI AS A MEANS OF VOCATIONAL GUIDANCE.

EDWARD D. ROBERTS,

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There is so little of mystery shrouding the origin of the Cincinnati continuation schools that one can readily affirm that the dominant motive in this origin was vocational guidance.

These schools are the outgrowth of an interesting combination of circumstances. First, Cincinnati shared with other cities the feeling of regret and responsibility that so many children had each year been leaving school to go to work as soon as the law allowed, that is, when just 14 and upon completing the fifth grade. There is reason to believe, too, that for a large number of pupils, "having completed the fifth grade," as specified by law, is not much more than a phrase without significance.

Second, the success of the work done in the Cincinnati Continuation School for Apprentices was of great influence in the organization of the compulsory continuation classes. The school for apprentices was organized in 1909, at which time it included classes for apprentices in machine shops and in pattern and drafting trades. Two years later classes were formed for apprentices in the 11 trades classed as the allied printing trades. This school is attended by boys who range in age from 16 to 21. They are in school one 4-hour session each week. This school attendance is paid for by the employers at the regular shop rate, and the boys are docked for absence or tardiness. The course of study is entirely academic and cultural. There are no machines in the school, all the direct practical experience being secured by the boy while in regular employment in his own shop.

The teachers in this school are both expert craftsmen and expert teachers. With these qualifications they retain the respect of the boys, to whom they become a very real inspiration, and they command the approval and support of the labor organizations and the employers. Their work is supplemented by the voluntary service of owners, superintendents, and foremen of the shops, and of representatives of labor organizations, who give instruction from time to time and assist in keeping the school and the shop in close connection.

Third, the Women Teachers' Association of Cincinnati has given serious consideration to the problem of girls who leave school to go to work. During the Christmas holidays in 1909 this organization devoted a meeting to the discussion of how to reach girls who were forced by need to leave school for work. At that meeting a committee was appointed to consider the whole matter, to make an investigation of conditions, and to suggest methods by which conditions might be bettered. This committee was called the continuation-school committee. At least half a dozen meetings were held by the

committee in 1910, at which were considered as many phases of the problem as it was possible to study by reading, by inquiry, and by actual observation. The members of the committee became convinced that there should be established a school to which the young women at work could come for at least one-half day a week, and they so recommended to the superintendent of schools.

As a result of these various movements, Supt. F. B. Dyer and the board of education began, in the spring of 1910, a movement to secure legislation upon the subject. In May, 1910, largely as a result of the work of Mr. Dyer and his board, the legislature passed the following law:

In case the board of education of any school district establishes part-time day schools for the instruction of youth over 14 years of age who are engaged in regular employment, such board of education is authorized to require all youth who have not satisfactorily completed the eighth grade of the elementary schools to continue their schooling until they are 16 years of age: *Provided, however,* That such youth, if they have been granted age and schooling certificates and are regularly employed, shall be required to attend school not to exceed 8 hours a week, between the hours of 8 a. m. and 5 p. m., during the school term. (Sec. 7767, Rev. Stat., Ohio.)

In January, 1911, the board of education adopted a resolution to establish part-time day schools in accordance with the law. These schools were to be opened the following September, when attendance would be compulsory for those subject to the provisions of the law. Employers were so notified and preparations were begun by the school authorities for organizing the work.

In February, 1911, a very competent elementary teacher, who was recommended by the committee of the Women Teachers' Association already referred to, was appointed supervisor of the continuation schools. Her first work was to visit all the department stores, in order to explain the work and to secure the cooperation of the employers. The response of the business men was unanimously sympathetic, and it was decided to open immediately a school of salesmanship.

In May, 1911, this continuation school of salesmanship was opened, under the direction of the supervisor and in immediate charge of a second very capable elementary teacher. This teacher had previously been granted a three months' leave of absence in order to attend the school of salesmanship connected with the Women's Educational and Industrial Union, Boston, Mass. To this initial effort in the field of continuation schools for girls, 25 firms sent their employees, usually young women over 16, one-half day a week. They attended without loss of pay and received instruction in English, civics, the art of salesmanship, store arithmetic and accounting, textiles and fabrics (objectively illustrated), applied art and decoration, personal hygiene, life ideals, and home economics. The school enrolled over

200 students (firms sending from 2 to 20 girls) and continued for three months, until the exigencies of the store vacation period made it necessary to close the school. The following September the attendance decreased because of the great burden put upon the store authorities by the organization of the compulsory continuation classes.

It can readily be seen that this school of salesmanship was entirely vocational in its intent, though its effect in the direction of guidance was rather secondary. Nevertheless, the good results for the employers, evidenced by the repeated expression of approval from them and by the fact that one firm arranged with the superintendent of schools for the exclusive services of the salesmanship teacher for some months, were not greater than the thoroughly stimulating and beneficial results upon the pupils.

The spirit of this school of salesmanship has proved to be the spirit of all the continuation-school work. Compulsory classes for those between 14 and 16 who were regularly employed, having the required age and schooling certificate, were organized in September, 1911. The teaching staff consisted of four persons, who gave their full time to this work, and of a large number of principals and teachers from the regular elementary and high schools. The pupils had left school presumably only after the completion of the fifth grade; but the evident lack of preparation for work which ought to be given such pupils made it doubtful whether many of them had completed the required grade in any very real sense.

At the beginning the work was based upon the regular elementary course. It soon became possible, however, to modify this course, partly by adapting the old material to a new method of treatment and partly by utilizing new material. The course was organized in detail at weekly conferences of teachers held throughout the first year of this work.

English and arithmetic form the backbone of the course, which includes also civics, hygiene, geography, physics, handicraft, art, and salesmanship. Daily drills are given in spelling, correct English, and rapid calculation. English includes reading, spelling, and correct usage, the aim being to connect these subjects with the daily life and work of the child. The work is made intensely practical, so that the spelling lessons will be words suggested by the child's occupation of the day. It is hoped, however, that the reading period will afford an opportunity to bring into the child's life a bit of the ideal, the cultural, which he might otherwise lack.

Arithmetic includes much practice in the fundamental operations, as well as work in fractions, percentage, business forms, pay rolls, the keeping of accounts, and simple bookkeeping.

Civics and hygiene, including moral instruction and personal guidance in conduct, is given more serious consideration than any

other part of the work. It not only has its place on the week's program, but it is brought in incidentally whenever possible.

Geography is studied largely from the commercial point of view, and is brought into close relation to present-day conditions in the child's own city and country. Much use is made of the stereopticon in connection with the geography work, as well as in the study of civics.

Physics has been given with a desire to broaden the child's outlook on life. The work is given by a regular high-school physics teacher, and consists of simple experiments, which illustrate some of the more common experiences of everyday life.

The handicraft or industrial work receives one-third of the pupil's time and, for the eighth-grade boys and girls, may occupy the entire four hours. Many of the boys who thus spend their full time in the shop taking a special line of work have completed the eighth grade and are attending continuation classes voluntarily. The girls who devote their whole time to industrial work are those who are preparing themselves for trade work in millinery or dressmaking.

It is this field of industrial work which offers the largest opportunity for vocational guidance. Not only is instruction closely related to the field of the child's present activity, but opportunity is offered for the child to receive preparation for the field of his preference. It is a common experience to have a child who is working at a blind-alley job elect at school the subject which will fit him or her for a job with a future. Many of the "vocational hoboes" have manifested a very strong desire to cease being such and to settle down with thought for the future.

In dealing with such pupils, the continuation-school teacher has a unique opportunity, for the teacher here deals with a child who has left the regular school and has gone into daily occupation in the business world. The boy or girl attends the school, it is admitted, through compulsion, but nevertheless with the always present consciousness of the job and its significance. To discuss with such children the opportunities of the curriculum and to allow the choice of subjects of instruction which have meaning in the world of jobs and wages, is the special advantage here.

The range of the school's activity in the industrial and commercial lines is therefore made clear to the child. Boys are allowed to elect shopwork in wood and iron, with classes in cabinetwork, wood-turning, forging, and electrical work. Art of the applied type, as well as mechanical drawing and lettering, open to the boys an attractive and desirable field. Girls may choose work in either sewing or cooking, as well as in novelty making and in millinery. Classes are conducted in salesmanship by an expert instructor.

In all the industrial work the effort is made to group, as far as possible, the children who work in one line of industry. This makes it possible to give the classes special instruction relating to that industry. However, the work is not always immediately related to the child's regular occupation—partly from a desire to counteract the results of purely automatic work and partly in order to give the child an insight into other lines of industry than those with which he is familiar.

The art course for boys is planned to give the development and skill which will secure him promotion in his field. Thus, the boy engaged in jewelry making is given problems in the designing of jewelry, and one employed in process engraving is given work in line and wash rendering. Mechanical drawing is taught to those who need it in their daily work. A study of simple lettering is made, as well as of the principles of proportion and of good and poor arrangement in signs and advertisements.

Girls who elect sewing or cooking spend half the time in this special field. The work is very practical in character. In sewing, the girls are taught garment making by machine, as soon as they have mastered the simplest principles of sewing. In cooking, emphasis is placed upon practical work and correct methods, the combination of suitable dishes for simple meals being the teacher's aim.

Novelty making is taught in some classes, the pupils being given instruction in sample mounting, making of novelties, covering and lining of boxes and cases, accurate measurements, and the solution of problems pertaining to the economical use of materials. Trade orders are solicited by the teacher, and the articles are made in class, with a view to emphasizing the trade side or money value of time, skill, and materials. The art work in color and design correlates with the work of the novelty-trade teacher. In a similar manner girls in the sewing and millinery classes have one period each week in drawing. This art work is closely connected with sewing and millinery.

Instruction in salesmanship is given to girls from the retail stores. The course consists of practical lessons in business arithmetic, including sales-slip practice and cash accounts; textiles, including cotton, flax, silk, and wool from raw material to finished product; color and design, including color combinations as to counter and dress; and salesmanship, including care of stock, approach, analysis of sale, closing sale, courtesy, demonstration sale. This work is plainly of great vocational value.

Thus, I have attempted to indicate the directions in which the Cincinnati compulsory continuation schools have developed and have seemed to be of vocational significance. To bring the story up to

date and to complete the tale, it is necessary to add that the legislature, at its session in the spring of 1913, changed the statutes regarding school attendance and child labor in such a manner as practically to eliminate the field of the compulsory continuation school. The new law makes it necessary for boys to remain in school until their fifteenth birthday and girls until their sixteenth. This leaves subject to the old unchanged continuation-school law only those boys at work between 15 and 16 who have not finished the eighth grade. However, under an interpretation of the attorney general, which construes as valid all age and schooling certificates issued before the new law went into effect last August, all children thus at work and subject to the law are attending continuation classes. These, with the boys already referred to as now subject to compulsory attendance, are the pupils with whom the work described is carried on.

IV. HOW SHALL WE STUDY AN INDUSTRY FOR PURPOSES OF VOCATIONAL EDUCATION AND VOCATIONAL GUIDANCE?

A. HOW SHALL WE STUDY THE INDUSTRIES FOR THE PURPOSES OF VOCATIONAL EDUCATION?

CHARLES R. RICHARDS,

Director of Cooper Union, New York City.

Of late years a large number of investigations or surveys have had for their purpose the development of data upon which to formulate measures of vocational education. The results obtained by many of these surveys have not seemed commensurate with their expense, nor, on occasions, with their pretensions. Their frequent weakness has been that the data obtained have not been of a nature capable of interpretation in definite educational terms. The present paper represents an attempt to present principles and lines of investigation that may be turned to immediate practical account. Its distinct purpose is to formulate lines of inquiry and enable data to be obtained upon which desirable relations of vocational instruction to a community or an industry may be accurately determined.

If we analyze the relation of education to industrial workers, we are likely to find that in each industry there is one of three ways by which the welfare of the workers in that particular industry may best be promoted: First, their industrial efficiency may be improved either as regards skill or technical knowledge; second, their general education may be extended; third, opportunities for physical and mental recreation and stimulation may be offered them, whereby the monotony of automatic tasks may be relieved and the narrowing or cramping influences surrounding the daily work may be neutralized.

It is evident that only the first of these divisions constitutes the field, in any strict sense, of vocational education. The other two lines may be equally valuable and important to the well-being of the workers under certain conditions, but they do not constitute in a strict sense vocational education. One is concerned with the extension of general education, perhaps under many conditions the most needed and helpful influence that can be brought to bear. The other represents a field of activities of great importance in large

numbers of factory and mill trades where the conditions are such that a combination of physically recreative and mentally stimulating experiences are the most important benefit that can be brought into the lives of young workers.

Before beginning any survey intended to develop a program of vocational instruction, it is evident that substantial indications should be present pointing to opportunities along the first division. Such evidence should indicate, first of all, that there is large need in the industries of the community under consideration for further skill or technical knowledge that can not be entirely supplied in commercial practice, and furthermore that this need is worth supplying. To be specific, we should know whether considerable difficulty exists in obtaining efficient workers; whether the industries represented are of sufficiently high grade to afford adequate employment that insures a fair standard of living. Besides these facts we should know certain things as to the general industrial situation in the community, such as the proportion of industrial workers to the total population; the status of the community and its social attitude toward industrial work; the situation as regards variety and concentration of industries; racial traditions as regards the use of the child as an income asset; the habit of the community in regard to the use of educational opportunities; whether the industries concerned represent on the whole healthful occupations; whether they represent on the whole industries that from the civic and social standpoint are desirable to encourage.

To obtain such an outlook might require a preliminary survey. If so, the methods and conclusions of such an inquiry should be based upon its particular purpose and should be thoroughly distinctive from investigations of the type to be hereafter considered, which aim to develop data to be used as a basis of a constructive program.

As a result of such a preliminary outlook upon the situation we should be able to determine roughly whether the prospects for the introduction of vocational education becoming a benefit to the community are such as to justify an intimate investigation of the community's industries.

Before attempting to formulate the lines of such an inquiry it may be well to point out that the propositions submitted are based upon the assumption that our main progress in vocational education is to be made by adapting instruction to the specific needs of different industries rather than by setting up general types of vocational instruction and inviting workers or would-be workers to conform thereto. This leads to the conclusion that an investigation that aims at direct constructive results from the educational side should address itself to the study of each of the important industries types of industry represented in the community.

The first effort of such an investigation would then endeavor to ascertain whether the industrial efficiency of those engaged in any industry or those intending to enter the industry may be improved either as regards skill or technical knowledge. In order to develop the lines of such an inquiry, the following analysis may be of service:

In general there are two aspects to every industry: (a) The purely manipulative side, that is, skill or dexterity, which may be denoted by S; and (b) the technical side, consisting of knowledge or information, which may be called T. The efficiency of a worker may be expressed by the equation $E=S+T$. Different industries vary greatly as to the amount of these two elements needed to secure efficiency. The following different cases and intermediate conditions stand out:

- (a) Both skill and knowledge are needed.
- (b) Skill is needed, but not technical knowledge.
- (c) Technical knowledge is needed, but not skill.
- (d) Neither skill nor technical knowledge is needed except in a very low degree.

Not only does the need for the two elements vary greatly in the different industries, but the opportunities for acquiring either or both of these elements in commercial practice are a matter of great variation.

Under (a) we may have three sets of typical conditions: (1) In which the worker can obtain both skill and requisite technical knowledge in regular employment; (2) in which he can acquire skill, but not technical knowledge; (3) in which he can obtain technical knowledge, but not skill.

Under (b) there are represented two typical conditions: (1) In which the learner can obtain skill in regular practice; (2) in which he can not.

Under (c) likewise there are two typical conditions: (1) In which technical knowledge can be acquired; (2) in which it can not be obtained.

This classification represents extreme typical conditions, between which are to be found intermediate stages.

From this analysis follows the first line of the proposed inquiry:

1. *Is skill or technical knowledge, or both, needed for efficiency and progress in the industry?*

If so, (a) can skill be obtained under conditions of regular employment? and (b) can technical knowledge required be so obtained?

As a result of these lines of inquiry it would be found, for example, that both skill and technical knowledge are needed in the industry. It would also be found, however, that in many industries under usual conditions the requisite skill may be obtained in practical work, but

that the technical knowledge required for progress and full efficiency may not be readily obtained. This would indicate that in such industries organized school instruction along technical lines may be of service. Again, it would develop that skill represents the important element in efficiency and that technical knowledge is of small account. In many industries the requisite skill can not be obtained under usual conditions of actual practice. Here again it is indicated that the school may have a possible place in the training on the manipulative side.

Further to determine the exact needs of school instruction, the following lines of inquiry are desirable:

2. *Opportunities represented by the industry.*—Opportunity as shown by (a) relative number of persons employed in the upper and in the lower stages of the industry; (b) average wages in the upper and in the lower grades; (c) proportion of new employees each year as compared to the total number of employees; (d) intermittence or steadiness of the industry; (e) number of departments or kinds of work represented in the industry.

3. *Ways in which the industry is recruited.*—Recruiting as shown under the following conditions: (a) Difficulty experienced in obtaining efficient workers. (b) How are high-grade workers recruited, by promotions from below or by direct employment? (c) Are untrained beginners wanted by employers? (d) Different ways in which beginners enter the occupation. (e) Average wage at which beginners enter the occupation; preferred age from employers' standpoint. (f) Percentage of those between 14 and 16 years of age entering during one year. (g) Percentage of those between 16 and 18 years of age entering during one year. (h) Average amount of general school training represented by beginners. (i) Are the wages small at first, growing slowly to high, or are they comparatively large at first but with small rate of increase? (j) Percentage of beginners leaving in the space of one year. (k) Percentage remaining in low-paid work at end of six years. (l) Percentage advanced to skilled or responsible work at higher wages at end of six years.

4. *In what ways do workers obtain training?*—(a) Have all beginners opportunities to learn more than one operation or kind of work? (b) Are there opportunities later on for those showing ability to change from one department to another? (c) Is the occupation open at the top for all beginners with requisite ability? (d) Does the worker receive any instruction or training from the employer? (e) Is there an apprenticeship system? (f) What percentage of all young beginners are apprenticed?

5. *Qualities demanded in a worker.*—Strength, endurance, intelligence, quickness, accuracy, dexterity, carefulness, artistic feeling.

6. *Conditions under which the work is performed.*—(a) Does the work involve any peculiar physical or nervous strain or present peculiarly unhealthy conditions? (b) Are the nature and conditions of the work such as to stimulate the intelligence of workers or such as to narrow and restrict their growth? (c) Are the influences surrounding the work morally deteriorating?

7. *Relations of occupation to school training.*—(a) Is the industry hampered by lack of knowledge or training on the part of beginners? (b) Is general school training beyond the "working-paper" grade of value for success in the occupation? (c) Is general school training beyond graduation from grammar school of advantage? (d) Is a complete high-school education of advantage? (e) Is industrial-school training in any form an advantage? (f) If either general or vocational training is an important advantage, just what kind of training is most necessary for efficiency? (1) General knowledge, (2) industrial and economic intelligence, (3) specialized technical knowledge, or (4) manipulative skill? (g) Would such instruction be most helpful if obtained before entrance upon the occupation or after?

As a result of the investigation outlined it should be possible to determine first of all whether the situation in the particular industry is such as to make school instruction in some form desirable from the standpoint of added efficiency; that is, whether the industry requires some form of skilled or technical knowledge that is not readily or satisfactorily obtained under conditions of regular work. Second, granted that this need is indicated, the investigation should allow us to determine whether the industry represents economic, sanitary, and other conditions that justify the community in providing means to assist its workers. Third, the investigation should indicate with some degree of definiteness what type of vocational school work is best adapted for serving the industry; that is, whether an all-day preparatory trade school dealing with pupils before entrance into the industry or part-time day classes or evening classes is needed and to what kind of subject matter such classes should address themselves. Furthermore, if it is desired, we should be able to ascertain for the industry in which vocational instruction is not an indicated need whether general school instruction or social-welfare work is an important need of the worker. Such data should allow us to ascertain fairly well the type of school instruction needed for the particular industry.

To illustrate the way in which such data might be interpreted in terms of a constructive program, let us examine two or three typical industries.

Industry 1.—In this industry both skilled and technical knowledge are required for efficiency. The requisite skill is obtainable und

conditions of practical work, but not the technical knowledge. The possibility of outside school instruction to supply this technical knowledge is consequently indicated. It is found that difficulty is experienced in obtaining efficient high-grade workers; it is also found that the industry presents adequate economic returns; that the conditions of work are satisfactory; and that opportunities for advancement are open. It is also found that beginners are not admitted below 16 years of age. Such conditions taken by themselves would indicate possibilities for either a preparatory trade school for those between 14 and 16 years of age, part-time day classes, or evening classes.

Further detailed study would be necessary to determine whether the required technical knowledge could be gained by boys below 16 years of age in a preparatory trade school, and whether they would attend such a school; whether or not the employers would allow attendance on part-time day classes; and still further consideration to determine what type of school would be best fitted for this particular condition.

Industry 2.—In this industry skill is needed for efficiency; conditions of practical work do not allow skill to be readily obtained; the trade brings good returns; conditions of work are satisfactory; difficulty is experienced in obtaining efficient high-grade workers; opportunities for advancement to high-grade work are frequent; beginners are not taken below 16 years of age. Such conditions indicate the possibilities of school instruction to supply training and skill. The same analysis would be necessary. In this case four possible school opportunities are suggested—a preparatory trade school for those from 14 to 16 years of age; a trade school for those above 16; part-time day classes; evening classes. Further investigation would be necessary to determine whether sufficient skill to meet the case could be given in a preparatory trade school; whether young boys below 16 would attend such a school; whether they would attend a school for a sufficient period after reaching 16 years of age; and whether or not the employers would allow attendance on part-time day classes. Still further consideration would be necessary to determine what type of school would be best fitted for this particular condition.

Industry 3.—In this industry skill is needed, but little technical knowledge. Difficulty is experienced in obtaining efficient high-grade skilled workers; wages of high-grade workers are good; conditions of workers fairly satisfactory; opportunities for obtaining skill needed for advancement are small; beginners enter in large numbers at 14 to 16 years of age and obtain fair wages. Such conditions indicate the possibility of a day preparatory school with short-term courses, part-time classes, or evening classes. Further study would be needed to determine the type best fitted.

If the need for general education or for social welfare work is to be looked into, the investigation should give at least primary indications on this side—if, for instance, the industry presents need for but little skill or technical knowledge, but presents fair returns in the upper grades, to which advancement can be made through experience; if the conditions of work as far as health and growth are concerned are satisfactory; if beginners are entered at 14 years of age—at the working-paper stage. Under such conditions it is probable that the extension of general education will be of important benefit to the workers. This would be doubly true of conditions similar to those just mentioned, but under which the line of advancement was very restricted, and juvenile workers, although employed in large numbers, would find employment only for short periods.

Furthermore, such an investigation would reveal conditions in which little skill or technical knowledge is required; in which, although the opportunity for advancement to fair wages is present, the work is concerned with such a narrow range of operations in connection with automatic machinery that the daily routine is monotonous and deadening in its effect. The study of such conditions of industry would very probably point to the provision of physical and social recreation as the greatest benefit that could be conferred upon workers.

B.—HOW SHALL WE STUDY THE INDUSTRIES FOR THE PURPOSES OF VOCATIONAL GUIDANCE?

Prof. FRANK M. LEAVITT,
University of Chicago, Chicago, Ill.

Since vocational education and vocational guidance are generally recognized as two phases of the great economic and social movement to improve the condition of those who form the base of the human pyramid which we call civilization, it may be asked, when the question "How shall we study an industry for purposes of vocational education?" has been answered, whether there will remain anything to be said from the point of view of vocational guidance.

If there be any distinction between the two viewpoints, it is because the movement, as already noted, is both economic and social, and because vocational education might possibly be expected to emphasize its economic phases, and vocational guidance certainly should emphasize its social features. It is possible to think of vocational education as having for its purpose the salvation of our industrial system and the maintenance of our commercial supremacy, but vocational guidance must have as its chief purpose the salvation of the lives and the ideals of the Nation's workers.

The two are not necessarily antagonistic, but the energy which impels each movement is likely to be drawn from a somewhat differ-

ent source. For this reason, if we study an industry from the point of view of vocational guidance, it may be for the purpose of bringing about a modification of existing conditions and methods in the industry quite as much as to secure a modification of the conditions and methods of education. It is well within the range of possibility that vocational guidance, when carried out in a comprehensive, purposeful, and scientific way, may force upon industry many modifications which will be good not only for the children but equally for the industry.

For example, we hear much about a "minimum wage." It is frequently contended that the minimum wage should be at least a living wage. But this makes no provision whatever for the fact that we have always had, and always shall have, children who are only partly self-supporting because they are in that transition stage between the period of dependence, on the one hand, and of full responsibility for one's own maintenance, on the other. What is radically wrong in the present situation is that children so often are obliged to work, and work intensely, for the full adult working period, and are given for their services a wage only sufficient for part support. When children work part time only, and when the remaining hours are spent as children should spend them in recreation and study, we shall hear less about a minimum wage for minors. And what is more to the point, the child-employing industry which is forced to adjust itself to the needs and rights of children in respect to hours of labor will inevitably gain by such adjustment.

The point I would try to make is this, that in studying an industry from the point of view of vocational guidance, we should try to ascertain what the possibilities are for reorganizing its methods of employing minors, and to show how such modification may result in common advantage, both to the industry and to the industrial worker. Vocational guidance will not hesitate to demand such modification merely because the industry is rich and powerful and the child relatively poor and weak. Why should we hesitate to lay hands on industry in the name of education when we have already laid hands on the school in the name of industry?

In studying the characteristics of the various industries in order to determine what are the "good" industries, we are told that a "good" industry is one in which there are clearly defined lines of progress from the lowliest "job" up to some of the prominent responsible positions in the organization, thus providing incentive for both work and study. In studying an industry from the guidance point of view, it is essential that we stand between the school and the industry and look in both directions—forward into the shop and backward into the school life of the child. We must be able to

say, eventually, that such and such experiences gained in the last year or two of the child's school life have rendered the first year or two of his vocational life more efficient and progressive than some other type of school work. In order to do this it will be necessary, not only to improve immensely the nature of our school records, but to establish the right to exercise some sort of community control and supervision of working minors, so that records of the early vocational years may also be preserved. It is only by taking the late school records, together with the early vocational records, and by considering them as a whole, as a continuous experience, that valuable conclusions can be reached and the industry be truly "studied."

It is quite clear that all this will take time and that the process can not produce immediate results, but beginnings can be made now; and we should remember that the project upon which we are engaged is one that will last indefinitely, advancing by slow growth from within rather than by superficial accretion.

Since any plan for giving vocational guidance involves the cooperation of parent, teacher, and employer, it is reasonable to expect that modifications will be brought about not only in the school but also in the home and in the shop. It is quite as reasonable to expect that the employer may be brought to see the advantage of making the early vocational experience educative as that the teacher shall be induced to give the later school experiences a real vocational flavor. In the problem of making a better adjustment between the child, the educational methods, and the vocational demands, we shall certainly find that the characteristics of childhood are more fundamental and changeless than are the characteristics of our industrial systems or of our school organizations. The "factory system," which is giving us most of our difficult problems in the industrial education movement, has evolved its important features within 200 years; our modern school has its roots in an educational tradition of perhaps four centuries; the characteristics of childhood are the same now as ages ago. They are constant—one might say eternal—while, by comparison, the "systems" of education and of industry are but transitory.

The child needs for his complete development play, study, and work. We can not improve matters materially by "saving" him from work until he is 16 or 18, for, as Prof. Ely has pointed out, the problem of child idleness is a far more serious one in the United States to-day than is the problem of child labor. So we must "save," that is to say, "improve" the work, and whatever may be of importance in studying an industry from the point of view of vocational education, from the point of view of vocational guidance the prime factor will always be the child, whose rights will be placed far above those of property or the dictates of educational tradition.

APPENDIXES.

A.—THE ROUND TABLE QUESTION BOX.

Presiding Officer, Prof. J. M. TELLEEN,
Case School of Applied Sciences, Cleveland, Ohio.

Question 1.—What should be the relation of vocational guidance to employment agencies?

MR. HENRY D. HATCH, Chicago: In this country we have very much to learn from Edinburgh, Scotland. In that city there is a very vital connection between the educational information department, which practically works out the vocational adjustment problem, and the employment department.

Under the Parliamentary act of 1910 it was made possible for boards of education to expend public funds in Scotland, and later in England, for the establishment of vocation bureaus. Afterwards the board of trade labor exchange made it possible to establish juvenile departments, and now throughout Great Britain and Ireland three different forms of cooperation exist. In my judgment the type found in Edinburgh is the wisest, where there is a combination of both functions, the juvenile department of the board of trade labor exchange and the educational information department in the board of education offices, both under board of education supervision and direct control.

MISS LILLIAN KANE, Hartford, Conn.: I wish to speak of the special problem of placement from my experience in Hartford. When I went to Hartford to start vocational guidance work there was no vocational education at all. The children were leaving school by the thousands between the ages of 14 and 16 and entering any industry they happened to find. We found by investigating in Hartford that placement is needed for children between the ages of 14 and 16.

Vocational guidance is too loose a scheme; that is, you can advise a child to enter a vocation, but you must define exactly the place for him to get the right guidance. Placement work is necessary, but it can not be done legitimately by the public-school system until there is a thoroughgoing system of continuation schools.

CHAIRMAN TELLEEN: There is a rather interesting phase in the city of Cleveland, where they have made provisions for an employment bureau in connection with which vocational guidance will be taken up. It is felt that vocational guidance must necessarily go hand in hand with the employment or placement.

MR. GUSTAV BLUMENTHAL, Washington, D. C.: An employment agency can not have much to do at present with vocational guidance. Most of the vocational agencies which the Young Men's Christian Association has started in Buffalo, Minneapolis, and New York have to do altogether with boys who have already been through school.

Vocational guidance should have its start in the schools before the children attain the age of 14 years and require employment. For the last three years I have practiced in America a kind of vocational employment work, but it was not actually to find positions for people; it was rather to size up what they were

actually capable of doing. We have recently started a vocational bureau in Washington, D. C. The chamber of commerce, the board of trade, and the manufacturers' association have no other purpose in this enterprise than to find work for high-school boys and girls in Washington when they leave school.

MR. EDWIN G. COOLEY, Chicago: They have a most practical bureau in the city of Edinburgh. In the building on Castle Terrace the organizer of continuation schools has his own office, and in the next room the man at the head of the labor bureau has his office, and this serves as a clearing house for the employment of youthful people in the city of Edinburgh. The educational organizer receives from men and women in charge of schools a list of those who are going to be free at the end of the year to seek employment under the law, being 14 years of age. He knows whether they are going to stay in school or whether they are going out. If they are going to leave, they are reported to this organizer of the continuation schools. Information is filed with him about these boys and girls as to their physical and mental characteristics—whether their eyes are good, whether their lungs are good, whether they are stupid or intelligent, industrious or lazy. Any general information that can be made available is all at hand in this organizer's office.

On the other side of the doorway is the application of the employer stating what he wants—a carpenter's apprentice, a plumber's apprentice, or whatever it may be.

It is the duty of this organizer each year, shortly before the close of the schools, to call the students in with their parents for a meeting, at which he, the teachers, the parents, and the members of a special committee appointed by the board of education, representing various trades, all talk with these boys and girls, to ascertain what wages are paid and how many positions there are to fill. Then, before the close of the year, the students make their applications to the educational organizer, stating what they would like to do. On the other side of that application is placed the information as to what is available. The work is carried on in a very systematic and careful manner. As soon as a boy or a girl enters upon employment, the continuation school organizer knows it; the child is called in; and full information is obtained concerning his employment. The system is working admirably in the city of Edinburgh.

Question 2.—At what period of the school work should vocational guidance be begun?

MR. JESSE B. DAVIS, Grand Rapids: It just happens that we begin with the seventh grade in Grand Rapids. That does not mean that we believe that this is the place where it necessarily should be begun. We have not tried to get at it from that point of view. It is a matter of evolution. We began the work in the high school and have worked it back to this point, and as so much of our work is in a condition of experimentation, this is about the only answer I can make to the question. In other words, so far as this formal study of the problem on the part of the pupil is concerned, we feel that the seventh grade is about as early as it is practicable; but others may have had experience in beginning it before the seventh grade.

There is some work in broadening the vision of the pupils that might perhaps be done earlier—industrial excursions, or something of that sort; but so far we have not attempted to do anything by way of formal instruction earlier than the seventh grade.

MRS. WILLS, Hartford, Conn.: In the State of Connecticut nearly 70 per cent of the children have left school by the end of the sixth grade. Therefore, if you begin vocational guidance in the seventh grade, it would only

touch a few of the children who leave school at the age of 14 to go to work. We think, in Hartford, that vocational guidance should begin just as early as possible.

Perhaps I do not understand what some of you mean by vocational guidance in the lower grades of school, but to me it would mean the study of aptitudes, such as the teacher can make from daily association with the child. Possibly an illustration would be of more interest. I know of a little apprenticeship school for machinists in a small town in Connecticut, where they take boys in at the age of 16; and the director of that school told me that within three months 40 per cent of the boys are discharged as not having the aptitude for becoming expert machinists. There the special requirement is that a boy should have the correct eye for proportion and direction. Without that qualification he can never be an expert machinist. As I say, the director informed me that the boys go in at the age of 16 and that 40 per cent of them are found to be misfits. Now, that should be found out by the teacher in the school long before the child is 14 years of age. To me what is meant by vocational guidance is the study of aptitude.

MR. F. P. GOODWIN, Cincinnati: A few of us in Cincinnati have been considering the advisability of trying something in the way of vocational guidance with that class of pupils whom we may call prevocationists—those pupils who perhaps are behind in their course, whom we are already putting or expect to put in prevocational work, largely manual in character, and who will spend at least half of their time in school and the other half in employment. We have not attempted this yet, but we have come to believe, as has just been said, that a good deal could be done through the study of aptitude.

I am willing to go further as a suggestion for an experiment and to urge that a considerable body of information should be given pupils of that class concerning the various trades which may be open to them, so that the child himself will be giving some consideration to the question of what his life career shall be. I should add in that connection that in my judgment there should be a strong contrast in the child's mind between the two classes of occupations he may enter—the blind-alley trade and the trade which opens up a career instead of simply a fair living at the beginning.

MR. HENRY D. HATCH, Chicago. Two points occur to me in this connection—one as to the relation of the charts which Dr. Ayres has exhibited¹ and the other in connection with what has just been said. Dr. Ayres very distinctly showed that the sixth grade and those below it contain half of the pupils who leave school. If you begin in the seventh grade to look after the vocational adjustment problems of these children you leave more than half of them out of any consideration whatever, and perhaps you leave out of consideration that half which is most in need of your help, because the circumstances of those who go on with their school work are much more favorable to their life outlook than are the circumstances of those who have dropped by the wayside in these lower grades.

Now, just a word again supplementing what Mr. Cooley has said and adding further to what I suggested in reference to Edinburgh. It is a part of their plan there that when the child is 12 years of age, or when he has reached the sixth standard, corresponding fairly well to our sixth grade, the parents are taken into a heart-to-heart talk with the school authorities as to the outlook for future school attendance on the part of the child. If it is the outlook of the child that he may go on into the higher-grade schools, having completed

¹ See p. 27f. for the data on which these charts were based.

the sixth standard, for a two-year course, or a three-year course, or a five-year course, leading eventually to a certificate to the university, then his way is clear through the regular courses that have been in operation for a number of years; but if it is the forecast of the parents that that child must leave school at 14, then it is the thought and arrangement of the school authorities in Edinburgh to care very carefully for the child during these next two years, between the age of 12 and 14, in what are known as the supplementary courses in the regular day school, courses which form the first foundation of the continuation school for those that do not get a chance to accomplish this work before they leave school.

MR. HENDERSON, Hammond, Ind.: It seems to me self-evident, if we are to give the child vocational guidance, that we must give it to the child while we have him and not after he is gone. If practically 70 per cent of the children leave school at the end of the sixth grade, we must get in ahead of that time.

It does not seem to me, however, that we should accept this condition as at all needful, that of a boy leaving school in the sixth grade at 14 years of age, or about two years retarded. We had better devote our attention to getting that boy past the sixth grade at the age of 14. If 70 per cent of the children leave school at the sixth grade, we would have to begin at the fourth grade. That does not seem to me to be needful at all. We as instructors should see to it that those children get beyond the sixth grade at the age of 14.

Question 3.—What methods and agencies are needed for advising school children with a view to securing the training indicated by vocational guidance?

MISS ANNE DAVIS, Chicago: We started to work in Chicago a little over three years ago with a private organization entirely outside of the schools. It started under the supervision of the School of Civics and Philanthropy, being assigned to the research department of that school. They were making an interesting study at that time of truant children who were coming out of the grammar schools, with no one to guide them or lead them into any beginning jobs; and in following up the children they found the majority of them landed sooner or later in the juvenile court as delinquent boys and girls. They began making a study of some of the industries and some of the jobs open to boys between the ages of 14 and 16; and after a few months of experimental work they began studying some of the occupations and industries open to girls in the city of Chicago between the ages of 14 and 16. For nearly two years we worked entirely outside of the schools. The result was the children that came to us were children that had been out of school for some time. They were children who had had anywhere from one to eight or nine jobs; they had drifted from one blind-alley occupation to another; and the result was that there was very little we could do for them in the way of vocational guidance. Some of them had worked on automatic machines; they could not see, and we could not make them see, that it was worth while to enter a trade as an apprentice at \$5 or \$6 a week, when they could earn \$8 or \$9 or \$10 a week on an automatic machine. For that reason, as I say, the result was that we could do very little for these boys and girls.

We saw, therefore, that the work ought to be done in the schools; that we ought to catch these children before their working certificates were issued and before they had a chance to get into any kind of employment.

In March of this year (1913), Mrs. Young and the board of education very kindly consented to give us office space in the board of education headquarters. Notices were sent out to the principals asking their cooperation and asking also if they would be willing to send children to us before they issued their working

certificates. Now, when a child asks for a working certificate or when a teacher understands a child is thinking of leaving school, the supervisor who has charge of the work nearest that school is notified; the child is seen; the home is visited and the parents interviewed; with the result that we have been able to return a good many children to school.

We found in two or three schools that it had simply become a custom for the children to leave at 14 years of age. In response to inquiry, numerous children said, "We are leaving school because we are 14 years old;" they thought they did not have to go any longer. When we held open the opportunities that the Chicago schools are now giving in the way of vocational training, when they heard of this and of the technical work in the high schools, we found we were able to return a large number of these children to school to continue their training.

We are doing a little work in placement, of course, but our main object is to get the child back to school and to put him in the way of further training if possible.

MISS M. EDITH CAMPBELL, Cincinnati: Do you think you can get a good idea of the industries without placement work?

MISS DAVIS: No; I do not think you can. We did very little work in placement at first. We find out, however, before we place children in these industries, all we can learn about the occupations and the conditions under which these children work, the opportunities open to them, and the wages paid to them. An interview with an employer gives us perhaps a very good idea of a certain occupation or a certain factory or a certain shop, but after a child has worked there we are not always convinced that the employer has given us a correct statement of the conditions in that factory or shop.

MR. C. B. CONLEY, Pittsburgh: I should like to ask if there is any cooperation on the part of the manufacturers?

MISS DAVIS: We have investigated about 4,000 shops, offices, and factories in the city. This is, of course, a very small percentage of the number we have in Chicago; but on the whole, especially since we have started to work in the school, the manufacturer has been very much interested in the work we are doing, and I think we have had very good cooperation. I might add that we have also had very good cooperation on the part of the unions in the work we are doing.

MR. RICHARDS, Rockford, Ill.: I should like to ask if the manufacturers apply to you for children?

MISS DAVIS: We do not wish the employers to think we are a regular employment bureau. We try to get that out of their heads. Just before I came away an employer called me up. He had called up the week before for a boy to fill a certain position because we had sent others to him who had been successful, and he told me he wanted another boy just like the boy we had sent him before. His need was a little more urgent than we could supply, however, and he called me up to say that our boy came a day too late; that he hired another boy, but was sorry he had not waited, but that now he wanted another boy and he was willing to wait until we could send him the right kind of a boy.

MR. CONLEY: You stated that you had the cooperation of the manufacturer. Does the manufacturer take sufficient interest in your boys to know how they are trained? Have they cooperated with you in any extent as to the curriculum? My reason for asking that question is this: So far as I know the city of Pittsburgh has the only school board that has set aside a sum of money for vocational guidance. We have always been reaching out to get the very best we could. If the manufacturer, from our view point, would do his very

best and interest himself in the training of the child as much as he does in getting him, I think it would relieve our work very much.

MISS DAVIS: We are working at that from another direction in Chicago by trying to get these manufacturers who employ boys who have had little training and have had to go to work at an early age to send the boys to school half a day a week. There is one company in Chicago sending 20 boys to elementary schools—boys who have not completed the grammar-school grades—for courses in academic subjects, English, history, mathematics, etc. We are working from that direction with these boys. The majority of the manufacturers are interested in their further training, but we have not been able to make them all see the benefit they are going to derive by giving the boys a half day off each week to go to school.

MR. W. M. ROBERTS, Chicago: I would like to say that the greatest work that vocational agencies have done has been to get the children back to school. About 40 per cent of those who apply for jobs are induced to go back to school and continue their courses. Usually, as Miss Davis has said, it would be advisable to suggest to these people something that could be done in school to further the purpose the child has in mind as his life work, some line of study or vocational course that can be taken up in high school.

MISS DAVIS: In answer to Mr. Conley's question as to whether the business men are in cooperation with this work, I should like to have Mr. Raymond Booth, who represents the association of commerce in cooperation with the board of education, state something of the work he is doing with the business men of Chicago.

MR. RAYMOND BOOTH, Chicago: It seems to me to be a rather healthy sign to any community when the business and educational interests realize that their interests in the boy who leaves school or is contemplating leaving school are, in the last analysis, one and the same. The Chicago Association of Commerce has definitely entered upon the work of vocational guidance simply from the business and economic viewpoint.

Employers are generally heard complaining of the loss of time and waste of energy they have in breaking in boys who drift into jobs for which they are not fitted; who therefore last only a brief length of time; and who at the expiration of that time have to be dismissed. It was felt that some means ought to be instituted whereby one of two things could be put into effect: First, that boys who were leaving school might be induced to stay in school longer, so that when they did leave they would give a better type of service to the employers; or second, that those who did leave might be placed in work for which they had the most natural aptitude.

Instead of going about this independently, it was felt that the best way to work it out was to cooperate with all the institutions interested, and particularly with the board of education, inasmuch as the board of education is training the future operatives for industry. So the association of commerce has for the past year been cooperating directly with the board of education. It has kept one representative in the field who has been trying to induce the boys who came to him to go back to school if they possibly could.

Employers are beginning to wake up to the fact that child labor is not in the last analysis profitable. A number of employers have told me that they would be only too glad to raise the age limit at which boys come to them and seek employment. In fact, a number of employers are gradually raising the age limit to 16, because they feel that the type of service that they get under that age is not efficient and is far from proving satisfactory. Employers are voicing a cry which is bound to be heard, and which is heard now, for greater efficiency

and a better type of service from the juvenile employees who come to them. We therefore try to keep the children in school just as long as possible, knowing that in the long run they are going to give a type of service that is better and more satisfactory to the boys and girls themselves and that is going to be of more value to the industries.

Again, those boys who do have to leave want to be linked up with the kind of work for which they have the most natural fitness, and so we have tried to extend the cooperative group of employers, especially among those who are members of the association of commerce. I have therefore been going around to a number of these employers, interesting them in the work by telling them what the board of education is doing, and that it was felt that the board of education and the association of commerce, representing the combined business interests, should work in direct harmony and should have at heart the best interest of these boys who are leaving school and who are potential citizens and business men. Of course, the association of commerce joined in this movement, not so much from philanthropic motives, but because they realized that in the long run they will be the gainers. It is obvious that if this waste of time and money in breaking in misfits can be obviated, the business interests, as well as the boys and girls, are going to be benefited.

So it seems to me that the very fact that the board of education of the city of Chicago and the business interests of the city of Chicago are organized, and that there is a strong cooperation between them, indicates a widened public feeling and a widened civic conscience.

MR. HENRY D. HATCH, Chicago: Mr. Chairman, will you kindly request Dr. Bonser, of Columbia University, to tell us how the Manhattan Trade School for Girls is solving the problem of guidance and preparation for employment and placement?

PROF. FREDERICK G. BONSER, New York: The Manhattan Trade School for Girls is making an endeavor to place girls who come to them in such work as fits their natural aptitudes. This school takes girls in the upper grades, gives them quite a variety of work to find out what their natural aptitudes are, and then advises them to concentrate upon that line of work for which they are best adapted. They are in pretty close touch with the employers in various lines into which the girls go, and they make a careful endeavor when a girl leaves school to help her to find the work for which she is adapted. They carry along a line of work which is from day to day a constant test of what the girl's commercial ability may be when she leaves the school; that is, they know at the end of any day, and the girl herself may know, just what she could earn if she were to go into a trade on the next day. As a result of this careful check as they go along they are enabled to place the girls pretty well.

Question 4.—What are to be the methods for discovering the capacities and aptitudes of school children?

CHAIRMAN TELLEEN: I think Cincinnati is the one city which is best qualified to give an answer to this question. I shall therefore call upon Miss Campbell.

MISS M. EDITH CAMPBELL, Cincinnati: We are attempting to do two things: One is to make a comparative study of children in school for five years and the other is to study the children at work, giving them a simple test at the end of each job, because we have a law which requires reregistration at the end of each job, so that they must come back and get a new work certificate. We are trying to make an extensive study of these children, and we expect at the end of five years to be able to give some information regarding them and as to the

results achieved under this plan. We have tested, in the three years that the work has been going forward, approximately 800 children. We are trying through the administrative office, to find out about the industries, and we are also trying to find out through simple psychological and physical tests the industrial record of each child in connection with a careful system of home follow-ups after the child has found employment, and also through these tests to discover his aptitude.

Question 5.—Has any complete system of work for a vocation counselor for a series of months been drawn up anywhere?

MISS SARA LOUISE ARNOLD, Boston: A year's program for those desiring to become vocational counselors has been arranged by the Women's Educational and Industrial Union of Boston. This includes research as to industrial opportunities, economics, statistics, observation, and practice. It is planned and will be carried on by the appointment bureau of the Women's Educational and Industrial Union of Boston and by instructors who are thoroughly equipped. It is especially offered to college graduates and experienced teachers who are preparing for the problems of vocational advice or counsel. This is the only year's program I know of offered to teachers. It had been expected that this program would go into operation this year, but conditions have compelled its postponement until next year.

Question 6.—Is vocational guidance a thing that concerns purely the submerged seven-tenths, that is, those children that drop out of school at an unseasonable age, or is it concerned with those who enter the professions—school teaching, say—and a good many other kinds of work?

PROF. BONSER: It has seemed to me from the beginning that vocational guidance is something that concerns all people who are in any way to render social service to others; and that some of our most valuable social capital is represented by those children who are able to go through the schools beyond the sixth and seventh grades. You know there are many misfits in the profession; you know one of the students in the vocational guidance class last year said she thought there were more misfits among the school teachers than in any other vocation.

The general character of this question leads me to suggest what might have a relationship to one of the previous questions that I did not feel moved to say anything about at the time. Where should vocational guidance begin? It seems to me that the whole discussion here has been in a certain sense an indictment of our public-school system. If it is the business of the public-school system to deal with problems that are in such close relation to life, problems which involve the earning of a livelihood, and if the boys and girls going through these earlier years of life under the guidance of the school teachers do not learn something that enables them to make a livelihood, then just so far, it seems to me, the public-school system falls short. Eventually, I believe, the outcome of vocational guidance will be to so organize the curriculum of the schools, both elementary and secondary, that the work will constantly bear sufficiently upon life to make it count for something in discovering both the vocational aptitude of the child and the business that has application to the child. If this thing works itself out in a large way and does not confine itself to the submerged and unfortunate class who must get out of school at an early age, then it does affect all the vocations, including professions, and it does affect all the children.

B.—VOCATIONAL GUIDANCE THROUGH ENGLISH COMPOSITION.

WORK IN THE GRAND RAPIDS (MICH.) HIGH SCHOOLS, UNDER JESSE B. DAVIS, VOCATIONAL DIRECTOR.

Members of the vocational guidance conference were admitted to the classrooms to observe the pupils in the discussion of vocational topics according to the following outline:

Seventh-grade theme: *Vocational ambition.*

Purpose, to arouse within the pupil a desire to be somebody and something worth while in the world.

Eighth-grade theme: *The value of an education.*

Purpose, to impress upon the pupil the need and means of obtaining some further preparation for life than that of the grammar grades of the public schools.

Ninth-grade theme, first semester: *The elements of character that make for success in life.*

Purpose, to draw out an understanding of real success in life and how it is obtained, and to apply the fundamental lessons of character building to the needs of each pupil.

Ninth-grade theme, second semester: *Vocational biography.*

Purpose, to continue the same lessons from the lives of successful men and women in varied fields of endeavor.

Tenth-grade theme, first semester: *The world's work.*

Purpose, to study vocation in general in order that the pupil's vision of the call to service may be as broad as possible.

Tenth-grade theme, second semester: *Choosing a vocation.*

Purpose, to attempt to select that vocation or general field of occupation for which the pupil by self-analysis seems best fitted.

Eleventh-grade theme, first semester: *Preparation for life's work.*

Purpose, to plan out a definite course of study and conduct to meet the special requirements of the profession, business, or industry chosen.

Eleventh-grade theme, second semester: *Vocational ethics.*

Purpose, to study the moral problems peculiar to the chosen business, profession, or occupation.

Twelfth-grade theme, first semester: *Social ethics.*

Purpose, to study the relation of the individual in his future vocation to society.

Twelfth-grade theme, second semester: *Civic ethics.*

Purpose, to study the relation of the individual in his future vocation to the state.

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BULLETIN, 1914, NO. 15

WHOLE NUMBER 588

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

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JANUARY, 1913-JANUARY, 1914

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PREFATORY NOTE.

Beginning with the year 1913, the Monthly Record of Current Educational Publications takes the place of the annual Bibliography of Education previously issued by this office. The present author and subject index is designed to make the 11 numbers of the Record from January, 1913, to January, 1914, inclusive, available for permanent use as an annual survey of educational literature. The references in this index are to the item numbers, which run consecutively throughout the series of monthly bulletins for the year. A very full system of subject headings is included, to supply the lack of a closer classification than was practicable in the monthly lists, and to afford ready access to material on each topic represented.

The index was compiled by Miss Isabel L. Towner, head cataloguer in the library of the Bureau of Education.

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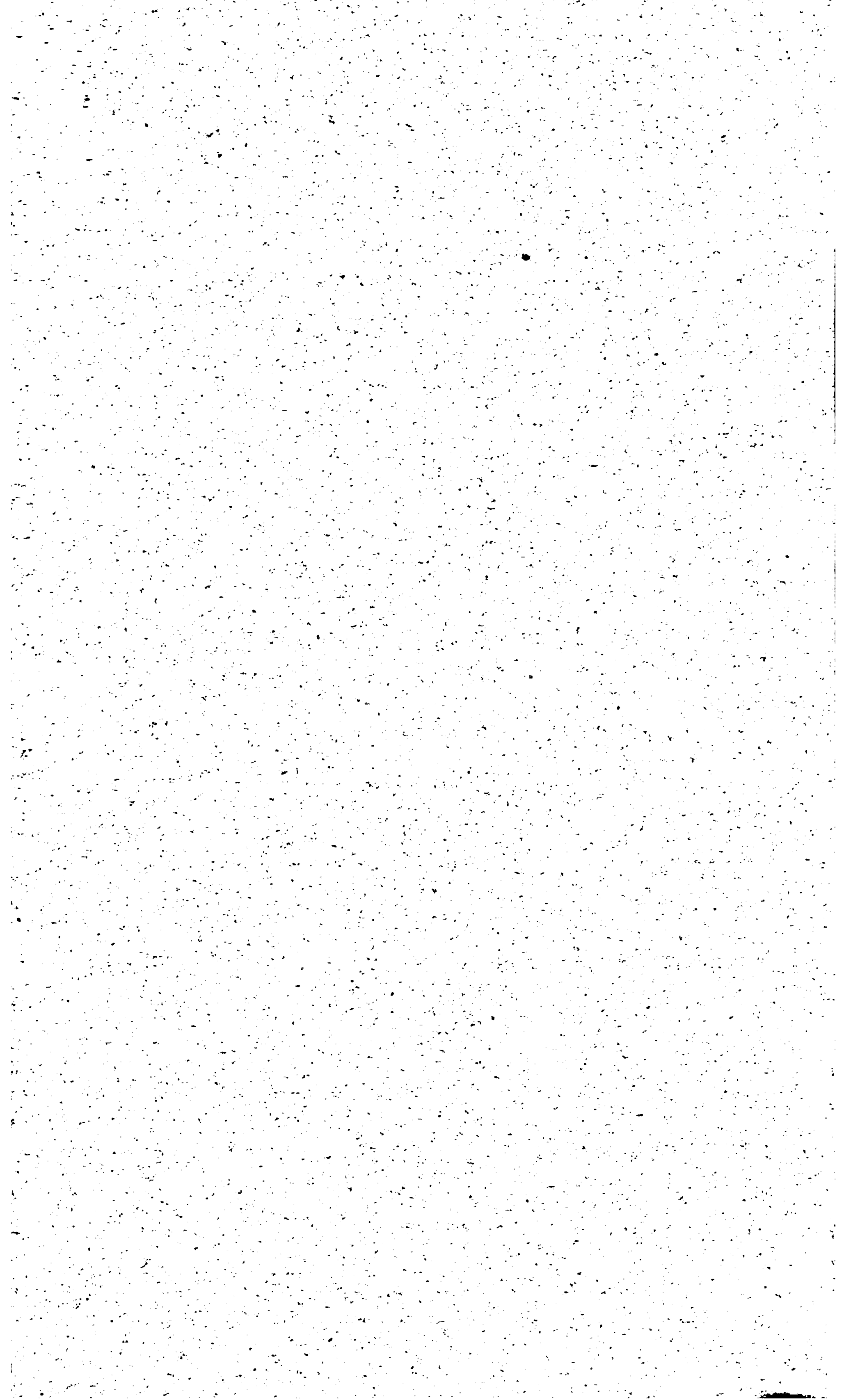
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